National Business Group on Health

Investing in Maternal and Child Health

An Employer's Toolkit

1. Maternal and Child Health: A Business Imperative – How employers benefit from healthy families
2. The Maternal and Child Health Plan Benefit Model – Evidence-informed, comprehensive, and sustainable employer-sponsored healthcare benefits for children, adolescents, and pregnant women
3. Balanced Scorecard & Analysis Tools – Linking maternal and child health outcomes to organizational performance
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All materials in this toolkit are available online at: **www.businessgrouphealth.org/healthtopics/maternalchild/investing**

1 Maternal and Child Health: A Business Imperative

- Maternal and child healthcare costs.
- The business case for investing in maternal and child health.
- Dependent coverage challenges.
- Strategies employers can use to improve the health of women and children.

1 Maternal and Child Health: A Business Imperative

Investing in Maternal and Child Health: A Business Imperative

The Business Case for Investing in Maternal and Child Health

Ever-increasing **healthcare costs** are forcing companies to explore alternative benefit designs and **health promotion** strategies for employees and their dependents. To reduce costs, employers are asking beneficiaries to manage their healthcare expenses and take on a consumer role in healthcare decision-making. Employers are also focusing on particular sub-groups of their overall beneficiary population to identify opportunities to improve health status and reduce cost. One important, yet commonly overlooked sub-group, is child and adolescent dependents and pregnant women.

Maternal and child health is important to business. Maternal and child healthcare services (e.g., labor and delivery, childhood immunizations) account for $1 out of every $5 large employers spend on healthcare.[1] Furthermore, a substantial proportion of employee's lost work time can be attributed to children's health problems. And pregnancy is a leading cause of short- and long-term disability and turnover for most companies.[2]

Improving the health of women and children, and improving the quality of the care they receive, will benefit an employer's bottom line.

Improving the health of children, adolescents, and childbearing-age women benefits employers in at least four ways:

1. **Lower healthcare costs.** Healthy women and children use fewer costly healthcare services (such as hospitalization) and thus have lower total healthcare costs.
2. **Increased productivity.** Parents of healthy children miss fewer workdays than those with ill children. As such, they are less likely to take family medical leave, personal sick leave, or paid time off due to a child's health problem. They may also be more productive at work because they do not suffer stress related to caregiving.
3. **Improved retention/reduced turnover.** Women who have healthy pregnancies (pregnancies without complications) are able to work longer during their pregnancy and return to work sooner after delivery as compared to women who suffer complications. Similarly, parents with healthy children and adolescents are less likely to leave the workforce or cutback their work hours compared to the parents of children with chronic illnesses or severe disabilities.
4. **A healthier future workforce.** The children and adolescents of today are the workforce of tomorrow. Many chronic diseases, for example obesity and mental illness, put children at risk for a lifetime of health problems. Employers benefit (from lower healthcare costs and improved productivity) when the people in the community or region where they recruit are healthy.

Investing in Maternal and Child Health includes information, resources, and tools employers can use to improve the health of their beneficiaries. This toolkit includes:

- Recommendations on evidence-informed, comprehensive health benefits to support child, adolescent, and pregnancy health. It also includes a cost-impact assessment of the recommended benefit changes (Part 2).
- Data on the cost of maternal and child healthcare services (Parts 2 and 4).
- The business case for investing in child and adolescent health, healthy pregnancies, and primary care services for all beneficiaries (Part 4).
- Tools employer can use to develop a maternal and child health strategy, communicate the value of their maternal and child health benefits, and link maternal and child health outcomes to organizational performance (Parts 3 and 7).
- Strategies employers can use to effectively communicate with beneficiaries, and tailor existing health programs and policies to the unique needs of children, adolescents, and pregnant women (Part 5).
- Health education information specifically developed for beneficiaries (Part 6).

Improving Maternal and Child Health

Maternal and child health refers to the health and health care of:

- Preconception women (women of childbearing-age prior to conception);
- Pregnant women;
- Postpartum women (women who were pregnant in the previous year);
- Children (birth to 12 years) and adolescents (aged 13 to 21 years), including those with special health care needs.

Benefit Design Opportunities

Benefit managers, charged with selecting and implementing health benefits, struggle with complex and sometimes contentious resource allocation decisions. Each year, benefits department staff must decide which healthcare services to cover in their plan(s) and at what level. Typically, these decisions were a function are cost, employee and/or union negotiations, and tradition.

Over the past 15 years, "evidence of effectiveness" has emerged as a key factor in health benefit investment decisions. Employers interested in "smart purchasing" have developed benefit plans that support and incentivize **evidence-based** or **evidence–informed** services. Many evidence-based benefit guidelines have been developed for adult care; far fewer are available to inform the design of **maternal and child health benefits**. Increasing healthcare costs, stagnating quality, and pressure from globalization have also led employers to shift their focus from budget-based allocation decisions to **value-based purchasing** strategies. Employers are beginning to see health benefits as an investment, not merely a cost.

The provision of evidence-informed, high-value maternal and child health benefits, and innovative, **family-friendly work/life benefits** may help employers improve the health of children, adolescents, and pregnant women, and the productivity of employees.

For additional information on evidence-informed benefits, refer to Part 2.

The Maternal and Child Health Plan Benefit Model

The Maternal and Child Health Plan Benefit Model (Plan Benefit Model) is the core component of this toolkit. The Plan Benefit Model is an evidence-informed, standardized, equitable, and comprehensive health benefits package created specifically for children, adolescents, and pregnant women. It emphasizes prevention and early detection, aims to reduce employee cost barriers to essential care services, and strives to balance employee affordability with employer sustainability.

The Plan Benefit Model is the National Business Group on Health's (Business Group's) recommendation on minimum health, pharmacy, vision, and dental benefits. It includes guidance on cost-sharing arrangements and other information pertinent to plan design and administration.

Concepts of evidence and value have helped balance health benefit decisions in recent years. However, the cost impact of benefit modification remains a critical factor in employers' resource allocation decisions. Furthermore, the potential cost-offsets of investing in prevention and early

detection are frequently overlooked. To address these issues, the Business Group sponsored an actuarial meta-analysis of the Plan Benefit Model. This analysis estimated the cost impact of the Plan Benefit Model recommendations on typical large-employer PPO and HMO plan types. The analysis, presented in Part 2, provides cost-impact assessments for (a) the entire Plan Benefit Model, (b) each service category (e.g., preventive services), and (c) each recommended benefit (e.g., immunizations). Employers can use this information to estimate the cost implications of adopting the Plan Benefit Model recommendations for their own covered population.

Variation in Benefits

While virtually all large employers provide health benefits, there is wide variation in the structure of benefits and coverage levels. While tailoring can be used to meet diverse needs, variation can also lead to fragmentation, beneficiary confusion, and administrative costs. The extreme cost, quality, and access variation seen in the marketplace today suggests that employers are not maximizing their investment in health benefits. Employers may be able to improve their return on investment in health benefits by improving the alignment between health benefits, organizational strategy, and internal operations. Part 3 includes tools to help employers evaluate the relationships between maternal and child health outcomes and organizational performance, implement and track Plan Benefit Model recommendations, and design and evaluate other maternal and child-focused health and work/life benefits.

Beneficiary Engagement Opportunities

Experience has shown employers that providing comprehensive health benefits is not sufficient to ensure good health for any population: engagement, appropriate utilization, and quality are necessary factors as well. In order for beneficiaries to become engaged in health promotion and healthcare decision-making, they need education on the importance of these activities, resources and tools, appropriate incentives, and employer support.

The idea behind **engagement** is simple. Beneficiaries will make better healthcare decisions if they are equipped with:

1. The knowledge necessary to understand their personal (or their child's) health needs and unique health risks; and
2. The information required to make effective healthcare decisions, for example information on cost and quality.

Many employers have successfully developed strategies to engage employees; few have effectively engaged dependent beneficiaries. Parts 4, 5, and 6 present strategies employers can use to engage dependent beneficiaries in health promotion and healthcare decision-making.

Overlooked Benefits: Child, Adolescent, and Maternity Care

Employer-sponsored medical benefit plans were originally developed to protect employees from the catastrophic costs of unplanned illness and injury. Over time, these "health insurance" plans evolved into "health coverage" programs as they began to provide access to basic healthcare services, preventive services, and ancillary services such as medical equipment, dental care, and vision care.[3]

Today, most large employers offer a robust benefits package that typically includes:

- Healthcare coverage (general medical; prescription drugs; specialty services such as behavioral health, dental, and vision care; and disease management services).
- Disability benefits.
- Employee assistance services.
- Wellness programs.

These programs are designed to provide health or health-related services that address specific employee and employer needs.

Employer-sponsored health coverage programs, past and present, have focused mainly on the needs of working-age adults. Benefit plans were structured to provide care to adults, and the unique health care needs of children were largely ignored. Consider the following examples regarding care for children and pregnant women:

- Children generally receive care in different settings than adults; they are more likely to need provider office visits, home health services, and school-based care, and less likely to need prescription drugs or hospitalization.
- The type and intensity of required care differs as well. For example, comprehensive well-child care, (essential preventive care), requires 26 provider office visits and at least 37 immunizations during the first 21 years of life.[4, 5] These critical healthcare services are a long-term investment: they set the stage for a lifetime of good health.
- One in five households with children in the United States includes at least one child with special health care needs. Nationwide, more than 18.5% of all children under the age of eighteen have a special healthcare need.[6] These children suffer from complex problems that are often best addressed by a **healthcare team** that can integrate necessary health, education, and social services.
- Research shows that preconception health affects pregnancy health and the health of infants and children. Therefore, child health requires a long-term perspective and an investment in women's health and well-being.

Typical employer-sponsored plans do not adequately account for these differences in either plan design or cost-sharing strategies.

Due to cost differences, a lack of visibility, and other issues, maternal and child health has been given less attention than health care for adults. Children, adolescents, and pregnant and postpartum women are a unique and important segment of an employer's beneficiary population. As a group they:

- **Require specific health interventions and healthcare services that are different in scope, intensity, duration, or setting from that of the general population.**
- **Have a different disease and condition profile.**
- **Often rely on others to access health coverage and services.**

Opportunities exist to improve existing benefits by tailoring them to better meet the unique needs of women and children.

Employer-Sponsored Health Coverage Pertinent to Maternal and Child Health

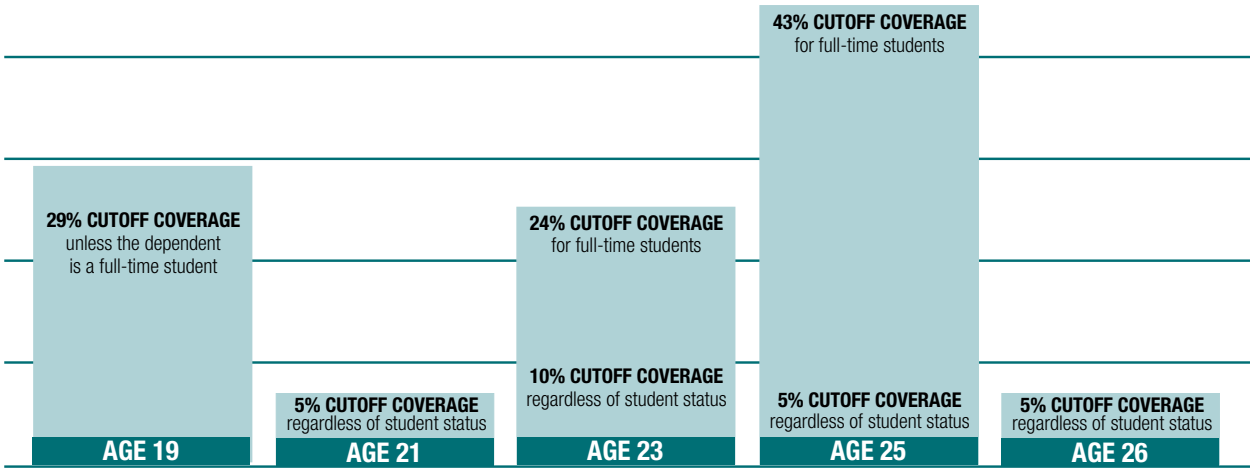
Dependent Coverage

The content of dependent coverage and the way it is made available to employees has a significant impact on access to care for children.

Gary L. Freed, MD, MPH,
Child Health Evaluation and Research Unit
University of Michigan Health System, 2006

Typically, employer-sponsored plans are open to qualifying employees under the age of 65, their dependents (children, and spouses or domestic partners), and occasionally retirees. Virtually all large employers provide maternity benefits (i.e., coverage for prenatal care, labor and delivery, and postpartum care). Dependent coverage for children varies by age, school status, and other factors. Most large employers provide child dependent coverage from birth, though adolescence, and into young adulthood. In fact, 43% of Business Group member survey respondents provide healthcare coverage to dependent children through age 25, as long as the child remains a full-time student.[7]

Figure 1A: Child Dependent Age Cutoffs for Large Employers



Source: National Business Group on Health. *Maternal and Child Health Benefits Survey* Washington, DC: National Business Group on Health; January 2006.

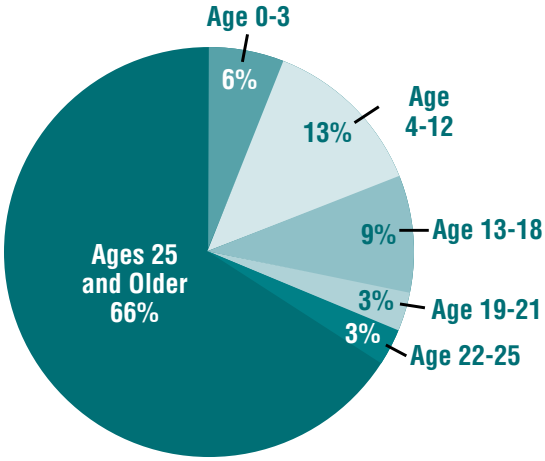
Demographics

Pregnant Women

According to the Census Bureau's 2008 American Community Survey, 61.7% of women who had a baby in the previous 12 months were in the labor force.[8] In 2009, employer sponsored insurance covered almost 2/3 of women between the ages of 18 and 64.[9]

Children and Adolescents

In 2008, there were 73.9 million children in the United States between the ages of 0 and 17 years, accounting for 25% of the total population.[10] In 2007, 54.2% of children had employer-sponsored health coverage.[11] According to Business Group surveys, child and adolescent dependents (through age 25) generally comprise about one-third of a large employer's total beneficiary population.[7]



Children with Special Health Care Needs

Approximately 18.5% of children under the age of 18 in the United States have a special health care need (a chronic and severe health problem that requires more intensive or specialized care than children normally require).[6] **Children with special health care needs** are only slightly less likely than their peers to have employer-sponsored healthcare coverage. Children with special health care needs are an important part of an employer's beneficiary population because they:

Researchers estimate that 8.6% of employees provide care to a child with a special need.[12]

- Experience complex, chronic, and severe health problems, which can be difficult to manage.
- Use more healthcare services than other children and thus have higher overall healthcare expenditures.
- Experience more sick days than other children and require additional office visits and hospitalizations, which results in lost productivity and absenteeism for their parents.

Pregnancy-Related Healthcare Costs: An Overview

In 2006, 90.5% of women had at least one health care expenditure.[13] Pregnancy is a major cause of health expenditures among women of childbearing-age.[14]

The total cost of a pregnancy includes physician/provider services for prenatal care and labor and delivery; hospital or birth-center fees for labor and delivery; laboratory and diagnostic testing costs; medication; and postpartum care. The total cost of a pregnancy is difficult to estimate due to different provider payment methods (e.g., capitation); extensive regional differences; and variance in the procedures, medications, and screening services women and their newborns receive. According to a recent study of women with employer-sponsored health coverage who delivered a baby in 2004, prenatal care and maternity-related hospital payments *combined* averaged $7,737 for a vaginal delivery and $10,958 for a **cesarean delivery** (these figures include patient out-of-pocket costs).[15]

Pregnancy and childbirth account for nearly 25% of all hospitalizations in the United States.[15]

In 2000, the average hospital charge for labor and delivery was $6,200 (this figure does not include for the newborn's care). Other types of obstetric hospital stays included antepartum care (average charge $6,900), care related to pregnancy loss (average charge $8,200), and postpartum care (average charge $8,900).[16] Among women in the U.S. with large employer sponsored plans, the average cost of having a baby in 2004 was more than $8,000.

Preterm birth is a serious health problem that costs the United States more than $26 billon every year, according to the Institute of Medicine. In 2007, the average medical costs for a preterm baby were more than 10 times as high as they were for a healthy full-term baby. The costs for a healthy baby from birth to his first birthday were $4,551. For a preterm baby, the costs were $49,033.17

The medical costs for both mother and her preterm baby in 2007, were four times higher than when a mother delivered a healthy full-term infant. The costs for a full-term infant were $15,047; while the costs for the preterm infant were $64,713.[17]

Healthcare Costs for Children and Adolescents: An Overview

In 2004, children accounted for 26 percent of the population and 13 percent of the primary health care spending.[18] Among children who used any type of healthcare service in 2000, the average medical expense was $1,115.[19] As is common in adult populations, a relatively small proportion of children are responsible for the bulk of total medical expenditures. For example, while the average per-child healthcare expenditure was $1,115 in 2000, the median expense was only $316.[19]

Although children with special health care needs make up less than 15% of the population, they account for 41% of all child health expenditures.[19]

By definition, children with special health care needs use more healthcare services than their peers. For example, children with special needs have twice as many outpatient care visits as other children.[19] The increased service use results in additional healthcare costs. Among children with a special health care need, the average medical expense was $2,498 in 2000, more than double the average for all children.

Healthcare Services Used	Children with Special Health Care Needs	All Children
Outpatient office visit	83.3%	67.4%
Emergency department visit	16.3%	11.1%
Inpatient hospital stay	6.0%	2.4%
Dental visit	50.3%	44.2%
Prescription medication	78.7%	45.8%

Source: Chevarley FM. *Utilization and Expenditures for Children with Special Health Care Needs.* Research Findings No. 24. Rockville, MD: Agency for Healthcare Research and Quality; 2006.

Special needs status is only one demographic variable that affects healthcare use and healthcare costs. For example, children living in the Northeast and the Midwest are more likely to use healthcare services and have higher healthcare expenses than children in other areas of the country. White children are more likely to incur medical expenses than either Hispanic or black children.[19] Age is also an important factor: very young children (0 to 5 years) are more likely to have healthcare expenditures than older children (6 to 11 years) or adolescents (12 to 17 years).[19]

For additional information on healthcare costs for children and adolescents, refer to Part 4

More than 4 million hospitalizations per year could be prevented by improving primary care, increasing access to quality treatment, and encouraging Americans to live a healthier lifestyle.
"In 2006, nearly 4.4 million hospital admissions totaling $30.8 billion in hospital costs were potentially preventable with timely and effective ambulatory care or adequate patient self- management of the condition. Hospital costs for potentially preventable hospitalizations represented about one of every 10 dollars of total hospital expenditures in 2006."

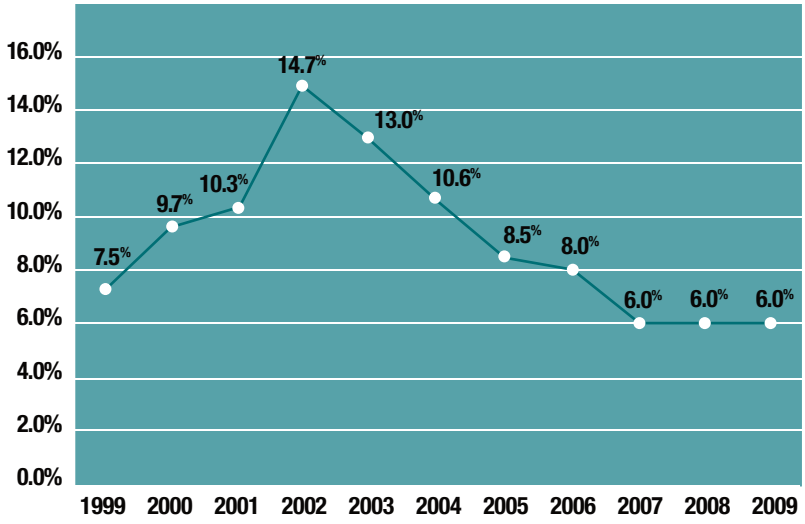
- Children accounted for about 276,000 potentially preventable hospitalizations, totaling $737 million in hospital costs.
- Among children, pediatric asthma was the most costly potentially preventable condition ($293 million), but pediatric gastroenteritis accounted for the highest number of potentially preventable hospitalizations (133 million admissions, or 183 admissions per 100,000 population).[20]

Employer-Sponsored Healthcare Coverage Costs

The cost of employer-sponsored health plans increased dramatically through the late 1980s and 1990s. Healthcare cost increases peaked in 2002, when the cost trend reached 14.7%[21](refer to Figure 1B). Since 2002, costs have stabilized; yet large employers still face steep annual increases.[21]

In 2005, large employers, on average, paid $6,658 per employee enrolled in an HMO plan and $6,518 per employee enrolled in a PPO plan (refer to Figure 1C) (note that prescription drug, mental health, vision and hearing benefits are included here if part of the plan, but dental is not).[22] By 2008, that cost increased to $8,106 per employee enrolled in an HMO plan and $7,861 per employee enrolled in a PPO plan (refer to Figure 1C). Additionally, employee contribution to an HMO plan for individual coverage averaged $1,104.[22]

Figure 1B: Large-Employer Healthcare Cost Increases, 1999-2009



Source: National Business Group on Health, Watson Wyatt Worldwide. *The Keys to Continued Success: Lessons Learned From Consistent Performers*. 2009 14th Annual Employer Survey on Purchasing Value in Health Care. Washington DC: Watson Wyatt Worldwide; 2009.

Figure 1C: Large-Employer Healthcare Costs* by Plan Type, 2005-2008

Plan Type	Average Cost* Per Employee			
	2008	2007	2006	2005
HMO	$8,106	$7,486	$7,004	$6,658
PPO	$7,861	$7,429	$7,029	$6,518

Note: *Total gross annual cost for medial plan only, for active employees and dependents, divided by the number of active covered employees. Includes employee contributions (payroll deductions) if any, but not employee out-of-pocket expenses such as deductibles and copays. Prescription drug, mental health, vision and hearing benefits for all active employees and their covered dependents are included if part of the plan. Dental benefits, even if a part of the plan are not included in these costs.
Source: Mercer Health & Benefits Consulting, National survey of Employer-Sponsored Health Plans: 2008 Survey Report, Mercer Health & Benefits Consulting; 2009.

For years employers have used employee cost-sharing to contain healthcare costs. In fact, growth in healthcare premiums has consistently outpaced both inflation and growth in workers' earnings for the past 20 years.[23]

Family out-of-pocket costs for medical care are also on the rise. In 2003, 18.2% of families covered by employer-sponsored health benefits spent 10% or more of their annual income on medical

The growth in healthcare costs has become a central women's health issue. A sizable share of women are falling through the cracks, either because they don't have insurance or even with insurance can't afford to pay for medical care or prescription drugs.

Alina Salganicoff
Vice President and Director of Women's Health Policy
Kaiser Family Foundation

expenses (premiums and copayment/coinsurance), compared to 14.2% in 1996. This represents a 28% increase over 8 years.

While employee cost-sharing is an effective cost-containment strategy, many experts believe that employers have maximized the financial benefit of cost-sharing.[24] High cost-sharing, specifically high premiums, can price some families out of the market. Similarly, high deductibles, copayment/coinsurance requirements, and out-of-pocket maximum amounts may force families to delay or forgo care. One of the primary purposes of the Plan Benefit Model is to balance employer sustainability and employee affordability. The Plan Benefit Model aims to ensure beneficiary access to essential care services by removing beneficiary cost barriers wherever possible, all without increasing employer costs.

Employer-Sponsored Maternal and Child Health Benefit Costs[1]

To provide data on the cost of maternal and child healthcare services for a typical large employer in the United States, PricewaterhouseCoopers (PwC) developed a cost projection model. This model included data from PwC's proprietary health insurance cost model and the Medstat database.

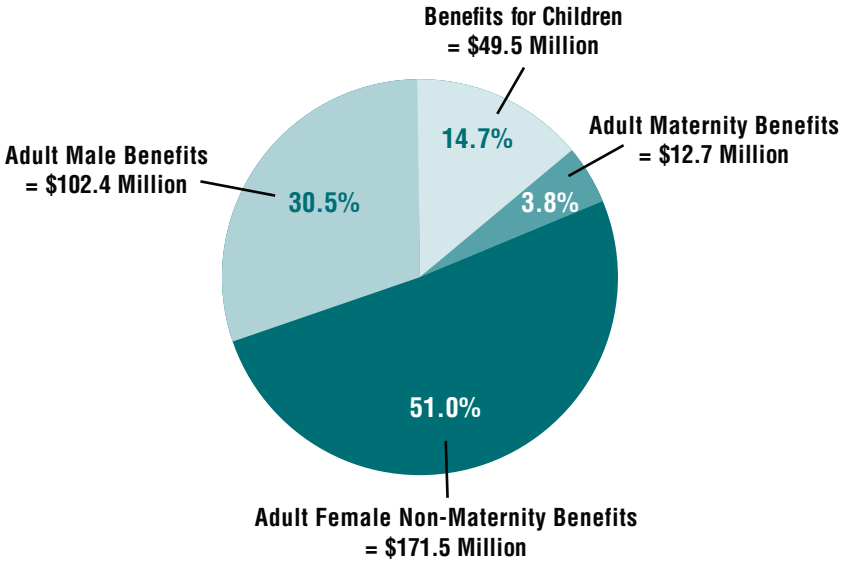
The Medstat database used in this analysis included information on the experience of 3 million members covered by large-employer healthcare benefit plans during 2004. This data set represents a typical distribution of enrollment by plan type (HMO, PPO, POS, and indemnity plans) and average cost-sharing provisions (deductible, coinsurance, and copayment). The data was normalized to reflect the typical level of costs for a hypothetical population of 120,000 beneficiaries (refer to Figures 1D, 1E, and 1F).

Average Annual Cost of Benefits For Covered Children and Adolescents	
Newborns (0-1 year)	$4,629
Children (1-12 years)	$872
Adolescents (13-18 years)	$1,125
All Children (0-18 years)	$1,258

Children and adolescents comprised 33% of the beneficiary population included in the Medstat data and were responsible for 14.7% of total costs ($49.5 million) (refer to Figure 1D). Children and adolescents' use of healthcare services, and the associated costs, were highest in the first year of life (including birth) and during late adolescence. Healthcare services for children and adolescents were responsible for 16% of inpatient costs, 12% of outpatient costs, 18% of professional services/office visit costs, 10% of prescription drug costs, and 24% of ancillary service costs.

Females comprised 54.6% of the adult beneficiary population and were responsible for 64.3% of adult-related costs. Maternity benefits, including prenatal and postpartum care services, were responsible for 3.8% ($12.7 million) of total plan costs.

Figure 1D: Health Plan Benefits for Large Employers, Average Benefits for a Plan with 120,000 Beneficiaries, 2004



Notes: The plan enrollment for this data includes active employees, retirees under 65, and COBRA participants. Dental benefits are not included. Benefits for retirees 65 and over are not included.
Source: PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.

Figure 1E: Beneficiary Healthcare Costs for Children and Adolescents, by Age, 2004

Age Group (Years)	Average Number of Beneficiaries	Inpatient Hospital Services	Outpatient Hospital Services	Professional Services	Prescription Drugs	Ancillary Services
00-00	1,664	$2,708	$242	$1,537	$67	$74
01-04	5,199	$177	$235	$569	$107	$58
05-09	7,613	$99	$154	$309	$135	$61
10-14	9,450	$126	$156	$307	$183	$71
15-19	10,099	$249	$279	$412	$249	$94
20-25	5,342	$367	$357	$493	$383	$110
Total	**39,367**	**$301**	**$228**	**$446**	**$203**	**$79**

Figure 1F: Total Plan Costs, by Age, 2004

Age Group	Average Number of Beneficiaries	Inpatient Hospital Services	Outpatient Hospital Services	Professional Services	Prescription Drugs	Ancillary Services	Total
Children	39,367	$11,860,067	$8,992,537	$17,572,525	$7,979,406	$3,101,806	$49,506,342
Adults	80,633	$62,093,331	$64,069,727	$81,467,397	$68,911,505	$10,021,403	$286,563,363
All Beneficiaries	120,000	$73,953,399	$73,062,264	$99,039,922	$76,890,911	$13,123,210	$336,069,705
Distribution of Benefits		22.0%	21.7%	29.5%	22.9%	3.9%	100%
Children's % of Total	33%	16%	12%	18%	10%	24%	15%

The 2004 data shown above was one of the primary sources used to project the average health plan costs for 2007. The updated 2007 plan costs were used to estimate the impact of the Plan Benefit Model's recommended changes in plan design. For more information on the cost impact of recommend plan design changes, refer to Part 2.

Health-Related Costs for Employers

In addition to health plan expenditures, employers pay for specialty services such as dental, vision, and mental health care; disease management services; short- and long-term disability; and costs associated with absenteeism, lost productivity, and turnover.

Workplace Burden

A substantial proportion of employee's **lost work time** can be attributed to child health problems. Research shows that child illness and injury result in absenteeism, tardiness, leaving work early, and significant work interruptions.[25] Working parents with young children in childcare typically miss 9 days of work annually due to child illness; the parents of elementary-school-aged children miss up to 13 days of work annually due to child illness.[26] These missed work days result in **lost productivity** costs for employers. In fact, employee absences due to childcare breakdowns cost businesses in the United States approximately $3 billion dollars every year.[26]

Approximately 26% of the time, employees who call in sick are actually staying home to care for an ill family member, usually a child.[27]

The parents of children with special health care needs are particularly vulnerable to lost work time. When asked about their experience during the previous year, parents of special needs children report an average of 20 missed school/childcare days, 12 provider office or emergency department visits, and 1.7 hospitalizations.[28] One study found that the mothers of children with a developmental delay or disability (e.g., cerebral palsy, autism) lose around 5 hours of work each week, totaling 250 hours per year. This translated into lost productivity costs of $3,000 to $5,000 a year (assuming an hourly employee cost of $12 to $20, including fringe benefits).[29]

The **workplace burden** of childhood illness is highest among the parents of young children, due to the increased rate of illness among young children and their inability to care for themselves.[31] Illness, injury, and disability among adolescents also result in lost productivity for parents and subsequent costs for employers. Adolescent injuries are the most expensive injuries of any age group and require a significant amount of care. The parents of these adolescents often lose work time in order to care for their child in the hospital and during the rehabilitation process. Unique issues of adolescence such as serious mental illness, substance abuse, and unintended pregnancy can cause in significant parental stress.

The impact of children's special healthcare needs on families is substantial: 20.9% of parents report that their child's health care needs caused them financial difficulties and 29.9% reduced their hours or quit their job because of their child's needs.[30]

Both child and adolescent health problems can result in **work cutback** or, in extreme cases, an **early exit from the workforce**. Research shows that work/life benefits can support families struggling with acute or chronic illness or injuries.[12] These benefits can reduce turnover and improve productivity.[26,27]

There is considerable evidence that child health affects parents' work lives. Poor child health can present substantial challenges to parents' effort to manage their work and caregiving roles. Child health, however, is more than just a personal concern for parents. Owing to healthcare costs, lost time, and other employment implications, child health is also a relevant consideration for business organizations.

Debra Major, Carolyn Allard
Journal of Occupational Health Psychology, 2004

Family-Friendly Benefits

Employer sensitivity to family issues is strongly associated with increased job satisfaction and loyalty. A 2000 America @ Work survey found that several **family-friendly benefits** were independently related to organizational commitment. Employees who had access to (a) flexible work schedules, (b) preventive medical care, and/or (c) childcare for sick children, even when they did not personally use these benefits, showed a stronger commitment to their organization and a significantly lower intention to quit than employees without access to these benefits.[32]

Family-friendly benefits are also a means of recruiting employees and promoting productivity (refer to Figure 1G). In a recent study, researchers evaluated the impact of four types of family-friendly benefits: prenatal programs, worksite lactation programs, sick childcare, and flexible working arrangements. All four benefit types were found to increase employer attractiveness. Furthermore, flexible working arrangements were found to improve productivity, and prenatal programs and lactation programs were found to reduce overall healthcare costs.[31]

Figure 1G: Family-Friendly Benefits Offered by Large Employers, 2009

Type	Family-Friendly Benefit	Percentage of Large Employers who Offer Benefit
Flexible Work Schedule	Flextime	54%
	Bring child to work in an emergency	29%
Leave Programs	Paid family leave	25%
	Family leave above and beyond that required by Federal FMLA	25%
	Parental leave above and beyond that required by Federal FMLA	17%
Other	Lactation program/designated area	25%

Source: Society for Human Resources Management. *2009 Employee Benefits: Examining Employee Benefits in a Fiscally Challenging Economy.*

Summary

Employers have a unique opportunity to improve the health of women and children through health benefit design, beneficiary education and engagement, and health promotion programs and policies. This toolkit provides employers with the information and tools they need to design and implement evidence-informed, comprehensive health benefits; effectively communicate benefit offerings to beneficiaries; educate beneficiaries on the importance of health promotion and disease prevention; and link these activities to organizational success.

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2 The Maternal and Child Health Plan Benefit Model: Evidence-Informed Coverage

Health plan benefit design recommendations to improve the health of children, adolescents, and pregnant women.

- Plan implementation guidance – plan administration information, cost-sharing provisions, and key definitions.
- The Maternal and Child Health Plan Benefit Model –recommendations on minimum health, pharmacy, vision, and dental benefits; and abbreviated cost-impact assessments.
- An actuarial analysis illustrating the financial impact of the Maternal and Child Health Plan Benefit Model on both PPO and HMO plan designs. Employers can use this information to estimate the impact of the Maternal and Child Health Plan Benefit Model recommendations on their covered population.
- A cost-offset addendum that provides economic data to support the cost-effectiveness of prevention and early detection.

2 Maternal and Child Health Plan Benefit Model: Evidence-Informed Coverage

Plan Implementation Guidance Document

This document provides a description of the Maternal and Child Health Plan Benefit Model and guidance for its implementation. It also includes an actuarial analysis illustrating the financial impact of the Maternal and Child Health Plan Benefit Model on both HMO and PPO plan designs. Employers can use this information to estimate the cost implications of adopting the recommended benefits in their own covered population.

Introduction

The Maternal and Child Health Plan Benefit Model (Plan Benefit Model) proposes a set of evidence-informed, comprehensive, standardized, integrated, and sustainable employer-sponsored health benefits for children and adolescents (ages 0 to 21 years), as well as preconception, pregnant, and postpartum women.

The model includes recommendations on *minimum* health, pharmacy, vision, and dental benefits; cost-sharing arrangements; and other information pertinent to plan design and administration. The Plan Benefit Model is not meant to be a gold-standard; rather, it is the National Business Group on Health's (Business Group's) baseline recommendation on which benefits *all* large employers should cover in *all* of their health plans.

The Plan Benefit Model was designed to:

1. Encourage evidence-informed benefit design.
2. Emphasize prevention and early detection.
3. Improve standardization.
4. Reduce employee cost barriers to essential care services.
5. Balance employee affordability and employer sustainability.

Plan Benefit Model Design

The Business Group used a multi-step process to identify, structure, and estimate the financial impact of the health benefits recommended in the Plan Benefit Model.

Development

The Business Group established the Maternal and Family Health Benefits Advisory Board (Benefits Advisory Board) to develop and vet the Plan Benefit Model, and to provide guidance on the overall project. The Benefits Advisory Board consisted of 14 Business Group member medical directors, benefit managers, and health promotion program staff; healthcare consultants; and delegates from the American Academy of Family Physicians (AAFP), the American Academy of Pediatrics (AAP), and the National Association of Pediatric Nurse Practitioners (NAPNAP). The Benefits Advisory Board met between February 2006 and May 2007 to design and revise the Plan Benefit Model.

Content and Data Sources

The benefits recommended in the Plan Benefit Model were adapted from clinical guidelines and recommendations developed by 28 professional organizations, healthcare groups, and Federal health agencies (refer to Figure 2A). In order to promote consistency and standardization, well-child care benefits were modeled on the American Academy of Pediatrics' *Bright Futures Guidelines* (2007, 3rd edition), which functions as the standard of preventive care in pediatric practices across the country.

When clinical guidelines and recommendations were not available, industry standard definitions and benefit coverage limits were applied. The Federal Employees Health Benefit Plan (FEHBP) was used

as the industry standard default. FEHBP is the largest group medical plan in the United States and is reviewed annually for adequacy.

In situations where clinical guidelines or recommendations conflicted, the Benefits Advisory Board reviewed the original documents and developed their own "expert opinion" statement.

Figure 2A: Organizations Cited in the Plan Benefit Model
Advisory Committee on Immunization Practices (ACIP)
Agency for Healthcare Research and Quality (AHRQ)
American Academy of Family Physicians (AAFP)
American Academy of Ophthalmology (AAO)
American Academy of Pediatric Dentistry (AAPD)
American Academy of Pediatrics (AAP)
American Association for Pediatric Ophthalmology and Strabismus (AAPOS)
American Association of Certified Orthoptists (AACO)
American College of Obstetricians and Gynecologists (ACOG)
American Dental Association (ADA)
American Dietetic Association (ADA)
American Medical Association (AMA)
American Psychological Association (APA)
American Speech-Language-Hearing Association (ASHA)
Bright Futures Guidelines
California Healthcare Foundation (CHCF)
Center for Medicare and Medicaid Services (CMHS)
Centers for Disease Control and Prevention (CDC)
Eye Med
Federal Employee Health Benefit Plan (FEHBP)
Hospice Foundation of America (HFA)
Kaiser Family Foundation (KFF)
National Academy of Neuropsychology (NAN)
National Hospice and Palliative Care Organization
U.S. Armed Services Health Care Services (TriCare)
U.S. Breastfeeding Committee (USBC)
U.S. Department of Health and Human Services, Bureau of Health Professionals (HRSA-BHP)
U.S. Preventive Services Task Force (USPSTF)

Review

The Plan Benefit Model was reviewed by the Benefits Advisory Board. In addition, an ad-hoc committee of 20 individuals and organizations reviewed the model and submitted comments and corrections. These external reviewers provided additional expertise and guidance. Reviewers included primary care providers; academic researchers; maternal and child health policy experts; patient and family advocates; and ancillary service providers, including dentists, dieticians, vision providers, and others. A full list of external reviewers is provided in the acknowledgements section on page A-iii.

Evidence-Informed Coverage

The Plan Benefit Model was informed by medical evidence. Some recommended interventions (e.g., STI screening) are evidence-based. Other recommended interventions do not meet the stringent criteria for being evidence-based, but nonetheless represent the best available information for health improvement. These interventions are based on what is called "recommended guidance."

Generally, the term "evidence-based" refers to medical interventions (e.g., tests, procedures, medications) that have been evaluated and determined to be effective. This means the intervention has a measurable impact on health outcomes: it prevents disease, reduces mortality, or improves a person's functionality.

Evidence-based interventions have a strong base of research to support their efficacy, safety, and cost-effectiveness.

An intervention is considered "**evidence-based**" when[1, 2]:

- Peer-reviewed, documented evidence shows that the intervention is medically effective in reducing morbidity or mortality;
- Reported medical benefits of the intervention outweigh its risks;
- The estimated cost of the intervention is reasonable when compared to its expected benefit; and
- The recommended action is practical and feasible.

Recommended guidance is based on the best available information about a condition, disease, or health service, but lacks the scientific research support in order to be considered evidence-based. Expert opinion, expert panel judgments, and consensus opinion are all forms of recommended guidance.

Evidence-based benefit design is an approach for developing health benefits. Evidence-based plans promote health care with demonstrated effectiveness by providing more generous coverage for services supported by strong evidence, and less generous coverage for services that are unproven or evidence indicates may be ineffective or unsafe.[3] The Business Group and many individual employers believe that this approach promotes quality and standardization, and helps reduce costs by eliminating waste.[3]

Evidence-based benefit design is a useful approach for many areas of clinical care. However, it is not feasible in *all* areas. For many interventions commonly performed in the course of child and adolescent care, there are few, if any, properly constructed studies that link the intervention with intended health outcomes. The absence of evidence does not demonstrate a lack of usefulness, however; it mostly reflects a lack of documented study.[4] Many organizations and institutions are working to fill these existing gaps in information.[4]

Until scientific research can be conducted, employers must find other ways to evaluate the usefulness and appropriateness of child health interventions. Recommended guidance (e.g., an expert opinion from a leading professional organization) is one important source of information in the benefit design process.

Evidence-based recommendations in pediatrics are limited due to[5]:

- *Unique ethical issues regarding the withholding of treatment from vulnerable populations.* It would be unthinkable for a clinician to withhold a long-standing treatment from a child in order to test its utility; yet, that is what a true randomized controlled trial (RCT) would require.
- *Lower levels of research investment.* Children's health problems (compared to adult issues) are less likely to be studied, and, when studied, the research is not as well funded.
- *Challenges of research in children.* Children are more difficult to study than adults. For example, because children's bodies change rapidly through the natural process of growth and development, the effect of a given intervention (e.g., counseling to promote weight loss in obese children) can be difficult to measure.
- *Demographic challenges.* Children aged 1 to 5 years in the United States are the most diverse in terms of race and ethnicity of any age cohort.
- *Social determinants of health* (e.g., poverty, education, social support) impact children to a far greater extent than adults.

The Plan Benefit Model is based primarily on recommended guidance. For the purpose of transparency, each proposed benefit carries an "evidence rating."

Evidence Rating	Level
Evidence-Based Research	1
Recommended Guidance • Expert Opinion • Expert Panel • Expert Consensus	2
Federally Vetted	3
Industry Standard	4

Plan Benefit Model Guidance

Covered Population

The Plan Benefit Model is designed to address the minimum health care needs of a target population:

1. Preconception, pregnant, and postpartum women.
2. Children (0 to 12 years of age) and adolescents (13 to 21 years of age), including those with special health care needs.

The Plan Benefit Model does not include recommendations on benefits for adult men (with the exception of vasectomy) or for adult women outside of the scope of maternity care.

The adolescent age limit (21 years) is consistent with commonly accepted definitions for differentiating between adolescence and adulthood.[4, 6] Plan provisions for preconception, pregnant, and postpartum women apply to adolescents who require reproductive health services.

Benefit coverage for labor and delivery, which includes services for newborns, can be applied to the mother and/or retrospectively to the newborn child once an application for the child's health coverage has been completed. It is recommended that the application for enrolling the newborn child be completed and submitted to the employer's health plan within 30 days of birth.

Referenced Health Plans

The Plan Benefit Model was designed to support two common managed care plan designs: **preferred provider organizations (PPOs)** and **health maintenance organizations (HMOs)**. These two plan designs were chosen because they are extremely common. As such, utilization and claims data could be used for actuarial modeling purposes. The Plan Benefit model can be applied to other plan designs, such as consumer-directed health plans (CDHPs); however, restructuring would be required.

Covered Services

Covered services described in the Plan Benefit Model are designed to support a range of healthcare services along a prevention—illness—chronic disease continuum. The covered services are organized into five descriptive categories:

- **Preventive Services** are designed to detect the existence of, or risk for, diseases, conditions, and problems. These services include comprehensive health assessments; age-appropriate screening, counseling, preventive medication, and preventive treatment; parent and child education; and anticipatory guidance. The recommended preventive services address the physical, mental, vision, and oral health care needs of the target population.
- **Physician/Practitioner Services** support the delivery of care by individual health professionals who may or may not be affiliated with a group practice or hospital.
- **Emergency Care, Hospitalization, and Other Facility-Based Care** address acute health care needs. These services may be necessary to treat illness, address injury, or support pregnancy.
- **Therapeutic Services / Ancillary Services** include an array of specialty services that may be performed in a practitioner's office, the beneficiary's home, or in a healthcare facility.
- **Laboratory, Diagnostic, Assessment, and Testing Services** are used to determine the presence, severity, or cause of an illness, or for diagnosing a specific illness, injury, or disability.

Plan Benefit Model Key Concepts

Cost-Sharing

Employee/employer cost-sharing is an employer strategy designed to lessen the financial liability of a health plan. While employee cost-sharing is an effective cost-containment strategy, many experts believe that employers have maximized the financial benefit of cost-sharing.[7] High cost-sharing, specifically high premiums, can price some families out of the market. Similarly, high deductibles and copayment/coinsurance requirements may force families to delay or forgo care.

Research has shown that as the cost of healthcare increases for beneficiaries, utilization of unnecessary *and* essential care decreases. When beneficiaries forgo preventive care or delay seeking care for an acute problem, there is a real risk that the problem will become exacerbated over time. In the end, the beneficiary is likely to require more intensive and expensive care than would have been required had he or she sought care when symptoms first emerged.

The Plan Benefit Model supports access to essential care services by removing beneficiary cost barriers wherever possible. The Plan Benefit Model aims to balance employee affordability and employer sustainability.

Growth in healthcare premiums has consistently outpaced both inflation and growth in workers' earnings for the past 20 years.[8] Between 2004 and 2008, the cost of buying coverage for an employee (i.e., the employee's share of the premium) increased 31% ($211) for single coverage and 39% ($956) for family coverage.[9, 10] Family out-of-pocket costs for medical care are also on the rise. In 2004, 18% of families with employer-sponsored health coverage spent 10% or more of their annual income on medical expenses (premiums and copayment/coinsurance), compared to 16% in 2001. This represents a 12.5% increase over 8 years.[11]

Typical cost-sharing methods include: premiums, deductibles, copayment or coinsurance, annual out-of-pocket maximums, and/or lifetime maximums. The Plan Benefit Model includes the following cost-sharing recommendations. These cost-sharing provisions were included in the actuarial analysis, with the exception of recommended premium and out-of-pocket amounts.

- **Preventive Services.** The Plan Benefit Model recommends zero cost-sharing for preventive services to avoid real or perceived financial barriers, and to increase utilization.
- **Premium.** If employers require employees to contribute toward the cost of health benefits, the Plan Benefit Model recommends an amount between 15% and 25% of the total plan cost.[12] In 2008, the average cost of coverage was approximately $4,704 for individual coverage and $13,476 for family coverage (these figures include employer *and* employee premium costs).[13] Twenty percent (20%) cost-sharing was applied to these numbers in order to calculate the following recommended premiums:
  - Individual (1): $941
  - Individual plus one dependent (2): $1,891
  - Family (3+): $2,695

  If a higher premium amount is required, the Plan Benefit Model recommends lowering the maximum out-of-pocket limit by a similar percentage. The Plan Benefit Model also recommends using scaled premiums that are consistent with an employer's salary banding methodology.
- **Deductible.** The Plan Benefit Model recommends *against* using deductibles because they can be cost barriers to essential services. If a deductible must be used, one amount should be collectively applied to all covered services described in the Plan Benefit Model.
- **Out-of-Pocket (OOP) Maximum.** OOP maximums protect beneficiaries from mounting cost-sharing requirements (premium costs and copayment/coinsurance). If an employer includes a cost-sharing provision, the Plan Benefit Model recommends the following annual total OOP schedule*:
  - Individual (1): $2,370 total ($1,500 maximum copayment/coinsurance, plus $870 premium).
  - Individual plus one dependent (2): $5,420 total ($3,000 maximum copayment/coinsurance, plus $1,740 premium).
  - Family (3+): $5,420 total ($3,000 maximum copayment/coinsurance, plus $2,420 premium).

  *Note that these recommended OOP maximums *include* dental and vision out-of-pocket expenses; they *do not* include out-of-pocket pharmaceutical costs.
- **Copayment.** The Plan Benefit Model recommends a copayment schedule for the HMO model. Copayments are a disincentive to the overuse of certain healthcare services; they also scale out-of-pocket spending with service use (i.e., beneficiaries who use more healthcare services are required to pay more in out-of-pocket costs than those who use fewer services). This schedule excludes preventive care, and is scaled to correspond with the cost and utilization frequency of the service category. Plan participants are protected from excessive copayment costs through the OOP maximum noted above.

- **Coinsurance.** The Plan Benefit Model recommends a coinsurance schedule for the PPO model. Coinsurance is a disincentive to the overuse of certain healthcare services; it also scales out-of-pocket spending with service use. This schedule excludes preventive services, and is scaled to correspond with the cost and utilization frequency of the service category. Plan participants are protected from excessive coinsurance costs through the OOP maximum noted above.
- **Annual / lifetime caps** are excluded from the Plan Benefit Model for reasons of equity.

The Plan Benefit Model's OOP maximum includes premium costs, which is atypical in the marketplace today. Premium costs were included in the OOP maximum so that employees will be able to assess their maximum financial liability for health coverage under an employer-sponsored group medical plan.

Communication

For additional information on effectively communicating benefit changes to beneficiaries, please refer to Part 5.

Employer-sponsored health plans subject to the Employee Retirement Income Security Act (ERISA) of 1974 are required to provide plan participants with specific information about the benefits to which they are entitled, including covered benefits, plan rules, financial information, and documents about plan operation and management. The Plan Benefit Model attempts to support the regulatory provisions contained in 29 CFR - CHAPTER XXV - PART 2520 regarding the publication of health plan provisions in a summary plan description (SPD). Employers are encouraged to develop their own plan administration rules regarding the following items, which are not referenced in the Plan Benefit Model:

- COBRA eligibility and administration procedures.
- Claims administration procedures.
- Eligibility requirements.
- Provider network administration rules.
- Details regarding plan sponsorship, governance, and termination provisions.

Plan Structure

- The Plan Benefit Model recommends that **group care** be reimbursed as a covered service. Group care allows for multiple plan participants to be seen at the same time by an individual provider or healthcare team. Group care is a cost-effective means of care that can improve quality and timeliness in specific situations. Group care is most relevant for education-based services such as nutrition counseling or anticipatory guidance. Employers are encouraged to develop administrative procedures and set reimbursement levels with their plan administrator(s).
- The Plan Benefit Model also recommends that care delivered by a "healthcare team" be reimbursed as a covered service. A **healthcare team** is a group of healthcare professionals who work together to recommend diagnoses or treatments. Currently, claims for services delivered by two or more providers on the same day for the same diagnosis are frequently denied. The

denial of such claims inhibits efficient referrals (e.g., the immediate referral from a primary care provider to a mental health specialist) and coordinated care.

- A **network**, for the purpose of a PPO or an HMO, is typically a geographic area designated by the employer or the health plan. Providers and provider services are classified as being "in-network" or "out-of-network." The Plan Benefit Model provisions recommended here only cover in-network providers and provider services. Employers should apply their own out-of-network provisions, as appropriate.
- **Plan coordination.** The Plan Benefit Model strongly encourages employers to coordinate the delivery of care when using multiple plan administrators (e.g., vision, dental, behavioral health). Beneficiaries are often confused by multiple plan administration rules and cost-sharing requirements, and employers sometimes duplicate payment for like services (e.g., EAP and mental health treatment services).
- **Flex benefits.** The Plan Benefit Model recommends that employers "flex" benefits for children and women with complex case management needs. All children with special health care needs and all women with high-risk pregnancies should qualify for case management. A definition of case management is provided in the next section. Employers should work with their health plan administrators to determine the exact nature of flex benefits. Some examples include:
  - Extending a single benefit for multiple providers (e.g., home health visits).
  - Providing additional benefits for high-risk populations (e.g., increasing preventive dental care visits from the recommended two visits per year to three visits per year for certain children).
  - Reducing or eliminating copayment or coinsurance amounts on essential services or products.

Key Definitions that Govern Plan Provisions

Most employer-sponsored health plans use a set of definitions to explain and govern plan provisions, and mediate appeals from plan participants and providers when claims are denied. The key definitions that guide the Plan Benefit Model are listed below. Each definition was created or adapted to meet the specific health care needs of children, adolescents, and pregnant women.

Medical Necessity

Medically necessary care is:

- Prescribed by a physician or other qualified healthcare provider.[A]
- Required to prevent, diagnose, or treat an illness, injury, or disease or its symptoms; help maintain, improve, or restore the individual's health or functional capacity; prevent deterioration of the individual's condition; or remedy developmental delays or disabilities.
- Generally agreed to be of clinical value.
- Clinically consistent with the patient's diagnosis and/or symptoms.
- Appropriate in terms of type, scope, frequency, duration, intensity, and delivered in a setting that is appropriate to the needs of the patient. [B,C]

[A] The fact that services are provided, prescribed, or approved by a physician or other qualified healthcare provider does not in and of itself mean that the service is medically necessary.

[B] Care should not be primarily for the convenience of the patient, physician, or another healthcare provider (e.g., elective cesarean delivery).

[C] Care should be rendered in the least intensive setting appropriate for the delivery of the service, procedure, or equipment.

Children With Special Health Care Needs

Children with special health care needs are those who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that usually required by children of the same age.[14] Children who are victims of abuse or trauma and children in foster care also qualify as "children with special needs" due to their demonstrated risk for physical, emotional, and behavioral problems.[3]

Case Management

Case Management refers to the arrangement, coordination, and monitoring of healthcare services to meet the needs of a particular patient and his/her family. Case management is conducted by a case manager or other qualified healthcare provider who—in collaboration with the patient and the patient's healthcare team—develops, monitors, and revises a plan that outlines the patient's immediate and ongoing health care needs. Case management may also include the coordination or delivery of the following services:

- Arrangement for community services.
- Arrangement for physician ordered services.
- Benefit administration.
- Benefit education/optimization and provider/facility selection.
- Collaboration with care providers within or outside of the healthcare team (e.g., social services, school counselors).
- Crisis intervention.
- Family consultation.
- Patient education.
- Patient advocacy.

The Plan Benefit Model recommends that all children with special health care needs and all women with high-risk pregnancies have access to case management services.

Experimental Treatment Modalities

A drug, device, or procedure will be considered "experimental" if any of the following criteria apply:

- There is insufficient outcome data to substantiate the treatment's safety.
- No reliable evidence demonstrates that the treatment is effective in clinical diagnosis, evaluation, or management of the patient's illness, injury, disease, or its symptoms, or; evaluation of reliable evidence indicates that additional research is necessary before the treatment can be classified as equally or more effective than conventional therapies.
- The treatment is not of proven benefit or not generally recognized by the medical community as effective or appropriate for the patient's specific diagnosis.
- The treatment has not been granted required FDA approval for marketing.[A]
- The treatment is only provided or performed in special settings for research purposes.

[A] This criterion does not exclude 'off label' use.

Plan Integration

Employers are strongly encouraged to systematically coordinate their health plan design and administration activities with other benefit and human resource programs. The Business Group believes this type of integrated approach will lead to decreased healthcare costs. Examples of integration opportunities include:

- Team with workforce scheduling staff to develop alternatives for pregnant and postpartum women and parents of children with special healthcare needs (e.g., compressed workweeks, telecommuting, flex-time, alternative start and end times, and partial workloads).
- Collaborate with disability plan administrators regarding return-to-work strategies for postpartum women.
- Coordinate plan benefit administration activities with employee assistance program (EAP) managers regarding the availability and use of mental health prevention and treatment benefits.
- Include information on the value of preventive services in work/life manager and employee training sessions.
- Include well-child care and prenatal care resources in health promotion materials.
- Incorporate maternal and child health needs into existing worksite-based health promotion programs and policies (e.g., healthy cafeteria, on-site immunizations, campus-wide smoking ban).

Actuarial Analysis

Purpose

Benefit managers charged with administering employer-sponsored health benefits are often forced to make difficult resource allocation decisions. Typically, an employer's benefits budget determines the selection and continuation of health benefits. However, increasing healthcare costs and stagnating quality have led many employers to shift their focus from budget-based allocation decisions to value-based purchasing strategies. **Value-based purchasing** brings together information on the quality of healthcare, including health outcomes and health status, with data on the dollar outlays going towards health.[15] It aligns financial incentives for beneficiaries *and* providers to encourage the use of high-value care while discouraging the use of low-value or unproven services.[16] Employers have also begun to evaluate the medical evidence for benefits, as described in the previous section.

Concepts of evidence and value have helped balance health benefit decisions in recent years. However, the cost impact of benefit modification remains a critical factor in employers' resource allocation decisions. To help employers understand the cost of adopting the Plan Benefit Model recommendations, the Business Group sponsored an actuarial meta-analysis of the model. This analysis estimated the cost impact of the model's recommendations on typical large-employer health

Because preventive services can prevent or reduce the need for treatment they provide a cost-offset. Employers who invest their healthcare dollars in screening, counseling, and preventive medications may be able to avoid spending healthcare dollars on treatment. In some cases, where the cost of screening is *less* than the cost of treatment, employers may be able to save healthcare dollars by investing in preventive services. For more information on cost-offsets, refer to page 77.

plans (PPO and HMO plan types). The analysis provides cost-impact assessments of the following:

- The Plan Benefit Model (in whole);
- Each service category (e.g., preventive services); and
- Each recommended line-item benefit (e.g., immunizations).

The meta-analysis was conduced by PricewaterhouseCoopers, LLP (PwC) in conjunction with the Business Group.

Process

In order to estimate the cost impact of the Plan Benefit Model, PwC:

1. Identified International Classification of Diseases Version 9 (ICD-9) diagnoses codes supported by the Plan Benefit Model.[A]
2. Used these codes and the Plan Benefit Model recommendations to construct a benchmark model, called the PricewaterhouseCoopers' PPO/HMO Benchmark Model (PPO/HMO Benchmark Model) (Figure 2B).
3. Priced the ICD-9 codes and developed utilization and cost estimates for the PPO/HMO Benchmark Model using PwC proprietary health insurance cost models, Medstat data, and data from other private and public-sector sources (e.g., peer-reviewed journal articles, meta-analyses).
4. Used key attributes of the PPO/HMO Benchmark Model to illustrate the employer and employee costs of a standard PPO and HMO. These plan costs were then applied to the Plan Benefit Model in order to calculate the estimated cost increase or decrease of applying the Plan Benefit Model recommendations to a typical large-employer health plan.

The HMO/PPO Benchmark Model is an actuarial model that PwC created in order to develop cost-impact estimates for the Maternal and Child Health Plan Benefit Model (Plan Benefit Model).

PPO/HMO Benchmark Model

The PPO/HMO Benchmark Model (Figure 2B) provides estimates of the average cost of typical large-employer health plan (PPO and HMO plan types). The costs are modeled for 2007 and represent typical utilization rates and service costs for large-employer health plans covering a commercial population of active employees and dependents.[B] The estimates are based on dollar amounts paid to healthcare providers who deliver medical, mental health, dental, and vision services covered under typical employer-sponsored health plans; they do not include administrative costs charged by the health plan administrator.

The PPO/HMO Benchmark Model was based on the following sources:

- PwC proprietary health insurance cost models;
- Large-employer claims experience from the Medstat database of 3 million members for services incurred in 2004; and
- Published healthcare cost reports.

Figure 2B: PricewaterhouseCoopers' HMO/PPO Benchmark Model

	Average Allowed Costs	Amount Paid by Employees	Amount Paid by Employers
HMO plan costs Average per member per month (PMPM)	$322.07	$29.98	$292.10
Average per employee per year (PEPY)	$8,116	$755	$7,361
PPO plan costs Average per member per month (PMPM)	$390.31	$86.52	$303.79
Average per employee per year (PEPY)	$9,836	$2,180	$7,656

PPO/HMO Benchmark Model Terminology

The following items describe terminology used in the PPO/HMO Benchmark Model:

- **Average Allowed Charges PMPM** represents billed charges (less provider discounts) and is equivalent to the total plan costs paid by the employer and the employees.
- **Amount Paid by Employees.** The estimated cost of services paid by employees depends on the cost-sharing provisions of their health plan. In order to facilitate comparisons to a known plan design, the following cost-sharing provisions were used in the PPO/HMO Benchmark Model:
  - **PPO Medical Cost-Sharing.** PPO cost-sharing for medical services includes a $250 deductible, 20% coinsurance, and a $2,500 out-of-pocket (OOP) maximum. The deductible and OOP maximum are on a per member basis. The family deductible is $500, and the family OOP maximum is $5,000. Note that this plan design does not have a fixed dollar copayment for office visits, which is fairly common in today's marketplace. However, many employers are shifting toward coinsurance as the predominant method of cost-sharing.
  - **HMO Medical Cost-Sharing.** HMO cost-sharing for medical services includes $10 copayment for primary care office visits, $25 copayment for specialist office visits, $100 copayment for emergency department visits and inpatient hospital admissions, $50 copayment for outpatient surgery, and 20% coinsurance for durable medical equipment (DME).
  - **Prescription Drugs.** For both PPO and HMO plans, cost-sharing includes $10 copayment for retail generic drugs and $25 copayment for retail brand prescriptions. Required copayment for mail-order prescriptions with a 90-day supply are $20 for generic prescriptions and $50 for brand prescriptions. Prescription drugs are not subject to an OOP maximum in the PPO/HMO Benchmark Model.
  - **Dental.** For both PPO and HMO plans, cost-sharing includes a $50 deductible. There is no coinsurance for preventive services, 20% coinsurance for restorative services, and 50% coinsurance for orthodontic services. The maximum annual dental benefit paid by the employer is $2,500 per member, with a $5,000 family maximum.

- **Vision.** For both PPO and HMO plans, vision exams require a $25 copayment and the maximum annual benefit for eye-wear is $200 per member.

- **Benefits Paid by Employer.** The amount paid by the employer is the difference between the *total allowed amount* and *the amount paid by employees*.

Maternal and Child Health Plan Benefit Model Actuarial Analysis

The Plan Benefit Model actuarial analysis begins on page 18. The data are organized into a PPO cost estimate (Figure 2E) and a HMO cost estimate (Figure 2F). The analysis documents provide estimates of the incremental cost to an employer of adopting each line-item benefit recommended in the Plan Benefit Model. The cost increases are expressed on a per member per month (PMPM) basis and as a percent increase to the PPO/HMO Benchmark Model described in Figure 2B.

Estimated Cost Impact of the Plan Benefit Model

If an employer *did not offer any* of the recommended benefits and choose to adopt the Plan Benefit Model in full, the recommended PPO plan would cost $390.31 PMPM or $9,836 per member per year (PMPY) and the HMO plan would cost $322.07 PMPM or $8,116 PMPY (refer to Figures 2E and 2F).

If an employer's current health plans were identical to the PPO/HMO Benchmark Model and the employer were to adopt all of the Plan Benefit Model recommendations, the employer's health plan costs would increase 10% and 6.2%, respectively (refer to column H in Figures 2E and 2F for line-item benefit cost estimates, and Figures 2C and 2D for high-level summaries). However, because most large employers provide coverage for at least some of the benefits recommended in the Plan Benefit Model (e.g., prenatal care), the total cost increase is likely to be less than noted. Analysis of the variance between an employer's current health plans, the PPO/HMO Benchmark Model, and the Plan Benefit Model is required for an exact cost-impact assessment.

Figure 2C: Estimated Impact of Plan Benefit Model Recommendations on a Typical Large-Employer HMO Plan Design

	Employer Impact of Plan Benefit Model (PMPM)	Total Employer-Adjusted Cost of Plan Benefit Model (PMPM)	Percent Employer Change from Current Cost Estimate (% of total)*
Impact Benefit Additions and Modifications	$13.34	4.6%	6.2%
Impact From Cost-Shifting to Employer/From Employee	$4.44	1.6%	N/A
Total	$17.78	6.2%	**6.2%**

Figure 2D: Estimated Impact of Plan Benefit Model Recommendations on a Typical Large-Employer PPO Plan Design

	Employer Impact of Plan Benefit Model (PMPM)	Total Employer-Adjusted Cost of Plan Benefit Model (PMPM)	Percent Employer Change from Current Cost Estimate (% of total)*
Impact Benefit Additions and Modifications	$20.81	6.9%	9.9%
Impact From Cost-Shifting to Employer/From Employee	$9.50	3.1%	N/A
Total	$30.31	10.0%	**10.0%**

How to Use the Actuarial Analysis Information

Employers can use the actuarial cost estimates listed in Figures 2C-2F to estimate the cost implications of adopting the recommended benefits for their covered population.

It is important to note that the financial data presented in the actuarial analysis documents *cannot* be used to predict the *exact* cost of implementing Plan Benefit Model recommendations for any particular employer. The cost increase estimates were based on the degree to which the HMO/PPO Benchmark Model benefits were *lower* than the benefits recommended in the Plan Benefit Model. If a given employer's current health benefits costs are lower *or* higher than those listed in the HMO/PPO Benchmark Model, or if the employer's current health plan costs do not match the HMO/PPO Benchmark Model costs, then the actuarial analysis cost estimates will not be exact. Therefore, it is important that employers compare their current health benefits to those recommended in the Plan Benefit Model and analyze the variance. A side-by-side comparison tool is provided in Part 3 for this purpose.

Explanation of Terms Used in the Actuarial Analysis Documents

Current Cost Estimate (PMPM)

- **Total costs (PMPM)**, similar to the **Allowed Charges**, represent 100% of the estimated costs that will be paid by the employer and employee. Total costs are expressed on a per member per month (PMPM) basis.
- **Paid by Members (PMPM)** represents the estimated amount or percent of the total costs that are paid by employees and dependents. These costs typically reflect the specific cost-sharing amounts that are included in each covered benefit or service. Employees and dependents are collectively referred to as "members" and costs are expressed on a per member per month (PMPM) basis.
- **Paid by Employer (PMPM)** represents the estimated amount or percent of the total costs that are paid by the employer and are expressed on a per member per month (PMPM) basis.

Revised Benefit Cost Estimate

- **Employer Impact of Plan Benefit Model (PMPM)** represents the estimated change in the employer costs that are created by applying the Plan Benefit Model recommendations to the total costs. These costs typically reflect recommended changes that were made to the cost-sharing strategy or benefit coverage levels.
- **Total Employer-Adjusted Cost of Plan Benefit Model (PMPM)** represents the employer's share of the combined total estimated cost for the Plan Benefit Model.
- **Member Impact of Plan Benefit Model (PMPM)** represents the member's financial portion of the costs associated with each service recommended in the Plan Benefit Model. The change in value from the PPO/HMO Benchmark Model is typically a function of the change in the recommended cost-sharing levels in the Plan Benefit Model.
- **Percent Change from Current Cost Estimate (% of Total)** represents the percentage change to the employer's share of the combined total estimated cost for the Plan Benefit Model.
- **Rationale for Change** summarizes the changes the Plan Benefit Model makes to the PPO and HMO Plan Design Benchmark Model along with the estimated cost or percentage change to the employer's share of the overall benefit plan costs.
- **Coinsurance or Copayment Amount** summarizes the value of the member's cost-sharing responsibility for a specific service category.
- **Coinsurance or Copayment Frequency** summarizes the frequency that a member will be required to pay the coinsurance or copayment amount.

Summary Points

- The Maternal and Child Health Plan Benefit Model (Plan Benefit Model) proposes a set of evidence-informed, comprehensive, standardized, integrated, and sustainable employer-sponsored health benefits for children and adolescents (ages 0 to 21 years), as well as preconception, pregnant, and postpartum women. It includes recommendations on *minimum* health, pharmacy, vision, and dental benefits; cost-sharing arrangements; and other information pertinent to plan design and administration.
- The Plan Benefit Model supports access to essential care services by removing beneficiary cost barriers wherever possible.
- To help employers understand the cost of adopting the Plan Benefit Model recommendations, the Business Group sponsored an actuarial meta-analysis of the model. This analysis estimated the cost impact of the model's recommendations on typical large-employer health plans (PPO and HMO plan types). If an employer *did not offer any* of the recommended benefits and were to adopt the Plan Benefit Model in full, the recommended PPO plan would cost $390.31 PMPM or $9,836 per member per year (PMPY) and the HMO plan would cost $322.07 PMPM or $8,116 PMPY. If an employer's current health plans were identical to the PPO/HMO Benchmark Model and the employer were to adopt all of the Plan Benefit Model recommendations, the employer's health plan costs would increase 10% and 6.2%, respectively.

Footnotes

[A] ICD-9 (2007) diagnosis codes that corresponded to the recommended services were included (ICD-9 diagnosis codes were excluded for general categories of services [e.g., office visits, ED visits]).

[B] The PPO/HMO Benchmark Model did not include the cost of case management services for children with special health care needs or other populations with complex medical needs. An estimate of the cost of adding flex benefits (as described in the Plan Benefit Model) would need to consider the degree to which these services are already provided in an employer's general case management benefit.

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Figure 2E: Pricing Analysis of the Maternal and Child Health Plan Benefit Model (HMO Plan Design)

HMO Benchmark Model Costs and Changes to Meet Minimum Plan Benefit Model Recommendations								
HMO Estimate (2007 Year Dollars)	Current Cost Estimate (PMPM) Average 2007 HMO Cost Per Member Per Month^^			Revised Benefit Cost Estimate				
Plan Benefit Model Recommendations^	Total Costs (PMPM)	Paid by Members (PMPM)	Paid by Employer (PMPM)	Employer Impact of Plan Benefit Model (PMPM)	Total Employer-Adjusted Cost of Plan Benefit Model (PMPM)	Member Impact of Plan Benefit Model (PMPM)	Percent Employer Change from Current Cost Estimate (% of total)*	
I. Preventive Services								
a. Well-Child Services	$2.24	$0.37	$1.87	$0.37	$2.24	$(0.37)	0.1%	
b. Immunizations	$2.21	$-	$2.21	$-	$2.21	$-	0.0%	
c. Preventive Dental Services	$6.86	$-	$6.86	$-	$6.86	$-	0.0%	
d. Early Intervention Services for Mental Health/Substance Abuse	$-	$-	$-	$4.83	$4.83	$-	1.7%	
e. Preventive Vision Services	$-	$-	$-	$0.32	$0.32	$-	0.1%	
f. Preventive Audiology Screening Services	$-	$-	$-	$0.32	$0.32	$-	0.1%	
g. Unintended Pregnancy Prevention Services	$3.07	$-	$3.07	$-	$3.07	$-	0.0%	
h. Preventive Preconception Care	$-	$-	$-	$-	$-	$-	0.0%	
i. Preventive Prenatal Care	$-	$-	$-	$1.61	$1.61	$-	0.6%	
j. Preventive Postpartum Care	$-	$-	$-	$0.32	$0.32	$-	0.1%	
k. Preventive Services (General)	$-	$-	$-	$3.22	$3.22	$-	1.1%	
Category Sub-Total:				$10.99		$(0.37)	3.8%	
II. Recommended Levels of Care for Physician/Practitioner Services								
a. Services Delivered by a Primary Care Provider	$23.72	$1.85	$21.88	$-	$21.88	$-	0.0%	
b. Services Delivered by a Mental Health/Substance Abuse Provider	$4.59	$0.82	$3.94	$0.74	$4.68	$-	0.3%	
c. Services Delivered by a Specialty Provider or Surgeon	$64.21	$2.53	$61.67	$-	$61.67	$-	0.0%	
d. E-Visits and Telephonic Visits	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Category Sub-Total:				$0.74		$0.00	0.3%	

	*Rationale for Change From Current Cost Estimate	Copayment	Copayment Frequency	Estimated Cost-Offset
	The HMO Benchmark Model includes a $10 copayment. Eliminating cost-sharing is estimated to **increase** the employer's plan cost by 0.1%.	-	N/A	Cost-effective
	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).**	-	N/A	Children: cost-saving, Adolescents: some cost-effective, some cost-saving in limited populations
	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).** If a plan does not currently provide coverage for preventive dental services, including these services with coverage at 100% will increase the employer's plan cost by 2.3%.	-	N/A	Early preventive care: cost-saving, Dental sealants: cost-effective in high-risk populations, Fluoride varnish: cost-effective in high-risk populations
	The HMO Benchmark Model excludes coverage for these services. Adding coverage for these services is estimated to **increase** the employer's plan cost by 1.7%.	-	N/A	Probably cost-saving
	The HMO Benchmark Model excludes coverage for these services. Adding coverage for these services is estimated to **increase** the employer's plan cost by 0.1%.	-	N/A	Cost-effective
	The HMO Benchmark Model excludes coverage for these services. Adding coverage for these services is estimated to **increase** the employer's portion of the plan cost by 0.1%.	-	N/A	Cost-effective
	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral)**. If a plan does not currently provide coverage for unintended pregnancy prevention services, including these services with coverage at 100% will **increase** the employer's plan cost by $3.07 or 1.1%.	-	N/A	Cost-saving
	The HMO Benchmark Model excludes coverage for these services. Adding coverage for these services is estimated to be **cost neutral.**	-	N/A	Cost-saving
	The HMO Benchmark Model excludes coverage for these services. Adding coverage for these services is estimated to **increase** the employer's plan cost by 0.6%.	-	N/A	Cost-saving
	The HMO Benchmark Model excludes coverage for these services. Adding coverage for these services is estimated to **increase** the employer's plan cost by 0.1%.	-	N/A	Breastfeeding promotion: cost-saving
	The HMO Benchmark Model excludes coverage for these services. Adding coverage for these services is estimated to **increase** the employer's plan cost by 1.1%.	-	N/A	Cost-saving or cost-effective
	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).**	1	per visit	N/A
	The HMO Benchmark Model includes a copayment of $25. Reducing the required copayment to $20 is estimated to **increase** the employer's plan cost by 0.10%. If an employer's HMO has a maximum of 30 mental health visits per year, removing this maximum will **increase** the employer's plan cost by $0.58 or 0.2%, assuming a typical level of managed care.	1	per visit	N/A
	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).**	1 or 2	per visit	N/A
		Left to TPA	per visit	N/A

Figure 2E: Pricing Analysis of the Maternal and Child Health Plan Benefit Model (HMO Plan Design)

HMO Benchmark Model Costs and Changes to Meet Minimum Plan Benefit Model Recommendations							
HMO Estimate (2007 Year Dollars)	Current Cost Estimate (PMPM) Average 2007 HMO Cost Per Member Per Month^^			Revised Benefit Cost Estimate			
Plan Benefit Model Recommendations^	Total Costs (PMPM)	Paid by Members (PMPM)	Paid by Employer (PMPM)	Employer Impact of Plan Benefit Model (PMPM	Total Employer-Adjusted Cost of Plan Benefit Model (PMPM)	Member Impact of Plan Benefit Model (PMPM)	
III. Emergency Care, Hospitalization, and Other Facility-Based Care							
a. Emergency Room Services	$17.05	$1.94	$15.11	1.56	$16.67	$(1.56)	
b. Inpatient Substance Abuse Detoxification	$0.86	$0.02	$0.84	$-	$0.84	$-	
c. Inpatient Hospital Service: General Inpatient / Residential Care (Including Mental Health / Substance Abuse)	$61.82	$0.59	$61.24	$-	$61.24	$-	
d. Inpatient Hospital Service or Birth Center Facilities: Labor / Delivery	$11.14	$0.09	$11.05	$-	$11.05	$-	
e. Ambulatory Surgical Facility or Outpatient Hospital Services	$69.64	$0.53	$69.11	$-	$69.11	$-	
f. Mental Health / Substance Abuse Partial-Day Hospital (or Day Treatment) or Intensive Outpatient Care Services	$0.19	$0.00	$0.19	$-	$0.19	$-	
Category Sub-Total				$1.56		$(1.56)	
IV. Therapeutic Services / Ancillary Services							
a. Prescription Drugs	$45.47	$14.96	$30.51	$-	$30.51	$-	
b. Dental Services	$17.07	$4.52	$12.55	$2.81	$15.36	$(2.81)	
c. Vision Services	$4.01	$0.17	$3.93	$-	$3.93	$-	
d. Audiology Services	$1.86	$0.62	$1.24	$-	$1.24	$-	
e. Nutritional Services	$-	$-	$-	$1.03	$1.03	$0.26	
f. Occupational, Physical, and Speech Therapy Services	$1.23	$0.31	$0.92	$-	$0.92	$-	
g. Infertility Services	$6.12	$0.30	$5.82	$-	$5.82	$-	
h. Home Health Services	$1.23	$0.21	$1.02	$-	$1.02	$-	
i. Hospice Care	$0.09	$0.01	$0.08	$-	$0.08	$-	
j. Durable Medical Equipment & Supplies	$2.33	$0.40	$1.93	$0.56	$2.49	$0.02	
- Medical Food				$0.09	$0.09	$0.02	
k. Transportation Services	$0.61	$-	$0.61	$-	$0.61	$-	
Category Sub-Total:				$4.49		$(2.51)	

	Percent Employer Change from Current Cost Estimate (% of total)*	*Rationale for Change From Current Cost Estimate	Copayment	Copayment Frequency	Estimated Cost-Offset
	0.5%	The HMO Benchmark Model includes a $100 copayment for ER services. Reducing the required copayment to $20 for urgent care services is estimated to **increase** the employer's plan cost by 0.50%.	3 or 5	per visit	N/A
	0.0%	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).**	4	per admission	N/A
	0.0%	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).**	4	per admission	N/A
	0.0%	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).**	4	per admission	N/A
	0.0%	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).**	3	per admission	N/A
	0.0%	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).**	3	per episode	N/A
	0.5%				
					:
	0.0%	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).**	Tiered	per fill/refill	N/A
	1.0%	The Plan Benefit Model includes member coinsurance for restorative and orthodontic procedures (20% and 50% respectively) will **increase** the employer's plan cost by 1.00%.	2	per visit	N/A
	0.0%	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).**	2	per visit	N/A
	0.0%	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).**	2	per visit	N/A
	0.4%	The HMO Benchmark Model excludes coverage for these services. Adding coverage for these services is estimated to **increase** the employer's plan cost by 0.40%.	2	per visit	N/A
	0.0%	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).**	2	per visit	N/A
	0.0%	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).** If a plan does not currently provide coverage for infertility services, including these services with a $100+ copayment will **increase** the employer's cost by $5.82 or 2.0%.	5	per visit/unit/ or per cycle	N/A
	0.0%	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).**	2	per visit	N/A
	0.0%	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).**	5	one time	N/A
	0.2%	The HMO Benchmark Model excludes coverage for hearing aids. Adding coverage for hearing aids will **increase** the employer's plan cost 0.2%.	1	per unit	Cochlear ear implants: cost-effective
	0.0%	The HMO Benchmark Model excludes coverage for medical foods. Adding coverage for medical foods will result in a negligible increase to the employer's plan cost **(cost neutral)**.	1	per unit	Donor breast milk: cost-saving for limited populations
	0.0%	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).**	2 or 5	per use	N/A
	1.6%				

Figure 2E: Pricing Analysis of the Maternal and Child Health Plan Benefit Model (HMO Plan Design)

HMO Benchmark Model Costs and Changes to Meet Minimum Plan Benefit Model Recommendations							
HMO Estimate (2007 Year Dollars)	**Current Cost Estimate (PMPM) Average 2007 HMO Cost Per Member Per Month^^**			**Revised Benefit Cost Estimate**			
Plan Benefit Model Recommendations^	**Total Costs (PMPM)**	**Paid by Members (PMPM)**	**Paid by Employer (PMPM)**	**Employer Impact of Plan Benefit Model (PMPM**	**Total Employer-Adjusted Cost of Plan Benefit Model (PMPM)**	**Member Impact of Plan Benefit Model (PMPM)**	
V. Laboratory Diagnostic, Assessment, and Testing Services							
a. Laboratory Services	$6.50	$-	$6.50	$-	$6.50	$-	
b. Diagnostic, Assessment, and Testing (Medical and Psychological) Services	$8.23	$-	$8.23	$-	$8.23	$-	
Category Sub-Total:				$0.00		$0.00	
Plan Design Total							
				$17.78	$309.88	$(4.44)	
Estimated Impact of Plan Benefit Model							
Impact of Plan Benefit Model Recommendations (Benefit Additions and Modifications):				$13.34	4.6%		
Impact From Cost-Shifting to Employer/From Member:				$4.44	1.5%	$(4.44)	
Total				$17.78	6.2%		
HMO Benchmark Model Costs							
Total Per Member Per Month (PMPM)	$322.07	$29.98	$292.10	$17.78		$(4.44)	
Total Per Employee Per Month (PEPM)	$676.35	$62.96	$613.41	$37.35		$(9.32)	
Total Per Employee Per Year (PEPY)	$8,116	$755	$7,361	$448		$(112)	

			Copayment	Copayment Frequency	Estimated Cost-Offset
	Percent Employer Change from Current Cost Estimate (% of total)*	***Rationale for Change From Current Cost Estimate**			
	0.0%	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).**	1 - 4	per battery	N/A
	0.0%	The HMO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral).**	1 - 4	per battery	N/A
	0.0%				
	6.2%				
	-14.81%				

Notes

Refer to the Maternal and Child Health Model Plan Benefit Model for a description of recommended benefits.

1. The term "member" represents employees and dependents. The Benchmark Model costs are summarized on a per member per month (PMPM) basis.
2. The Benchmark Model average costs shown in this table are for a HMO plan with the following member cost-sharing specifications:
   - Medical: office visit copays = $10 PCP/ $25 specialist; outpatient surgery = $50; ER copay = $100; inpatient = $100 per admission.
   - Prescription drugs: $10 generic and $25 brand copay for prescriptions (mail order = 2 times retail).
   - Dental services: $50 deductible, 0%/20%/50% coinsurance for preventive/restorative /orthodontic services, with a $5,000 maximum benefit per year.
3. A given employer's health plan costs may vary from the rates shown above due to differences in plan design, member demographics, provider payment rates, or level of managed care practices for medical and mental health services.
4. Unless otherwise noted, changes in coverage to meet the minimum Plan Benefit Model recommendations are applicable to all members.

*Cost estimates for select Plan Benefit Model recommendations are based on assumptions developed by the Business Group for (a) the degree to which the service is currently covered by large-employer health plans, and (b) the prevalence of the condition the service seeks to address.

Figure 2F: Pricing Analysis of the Maternal and Child Health Plan Benefit Model (PPO Plan Design)

PPO Benchmark Model Costs and Changes to Meet Minimum Plan Benefit Model Recommendations							
PPO Estimate (2007 Year Dollars)	Current Cost Estimate^^ Average 2007 PPO Cost Per Member Per Month (PMPM)			Revised Benefit Cost Estimate			
Plan Benefit Model Recommendations^	Total Costs (PMPM)	Paid by Members (PMPM)	Paid by Employer (PMPM)	Employer Impact of Plan Benefit Model (PMPM)	Total Employer-Adjusted Cost of Plan Benefit Model (PMPM)	Member Impact of Plan Benefit Model (PMPM)	
I. Preventive Services							
a. Well-Child Services	$2.24	$0.84	$1.40	$0.84	$2.24	$(0.84)	
b. Immunizations	$2.21	$0.83	$1.38	$0.83	$2.21	$(0.83)	
c. Preventive Dental Services	$7.60	$-	$7.60	$-	$7.60	$-	
d. Early Intervention Services for Mental Health / Substance Abuse				$5.85	$5.85	$-	
e. Preventive Vision Services				$0.39	$0.39	$-	
f. Preventive Audiology Screening Services				$0.39	$0.39	$-	
g. Unintended Pregnancy Prevention Services	$3.42	$1.19	$2.23	$1.19	$3.42	$(1.19)	
h. Preventive Preconception Care				$-	$-	$-	
i. Preventive Prenatal Care				$1.95	$1.95	$-	
j. Preventive Postpartum Care				$0.39	$0.39	$-	
k. Preventive Services (General)				$3.90	$3.90	$-	

	Percent Employer Change From Current Cost Estimate (% of Total)*	*Rationale for Change From Current Cost Estimate	Coinsurance	Coinsurance Frequency	Estimated Cost-Offset
	0.3%	The PPO Benchmark Model includes a deductible and 20% member coinsurance. Eliminating the deductible and coinsurance is estimated to **increase** the employer's plan cost by 0.3%.	-	N/A	Cost-effective
	0.3%	The PPO Benchmark Model includes a deductible and 20% member coinsurance. Eliminating the deductible and member coinsurance is estimated to **increase** the employer's plan cost by 0.3%.	-	N/A	Children: cost-saving, Adolecents: some cost-effective, some cost-saving in limited populations
	0.0%	The PPO Benchmark Model is consistent with the Plan Benefit Model (cost neutral). If a plan does not currently provide coverage for preventive dental services, including these services with coverage at 100% will **increase** the employer costs by 2.5%. If the employer's PPO covers these services but requires 20% member coinsurance, eliminating the coinsurance will **increase** the employer's plan cost by $1.52 or 0.5%.	-	N/A	Early preventive care: cost-saving, Dental sealants: cost-effective in high-risk populations, Flouride varnish: cost-effective in high-risk populations
	1.9%	The PPO Benchmark Model excludes coverage for these services. Adding coverage for these services is estimated to **increase** the employer's plan cost by 1.9%.	-	N/A	Probably cost-saving
	0.1%	The PPO Benchmark Model excludes coverage for these services. Adding coverage for these services is estimated to **increase** the employer's plan cost by 0.1%.	-	N/A	Cost-effective
	0.1%	The PPO Benchmark Model excludes coverage for these services. Adding coverage for these services is estimated to **increase** the employer's plan cost by 0.1%.	-	N/A	Cost-effective
	0.4%	The PPO Benchmark Model includes a deductible and 20% member coinsurance. Eliminating the deductible and coinsurance will **increase** the employer's plan cost by $1.19 or 0.4%. If a plan does not currently provide coverage for unintended pregnancy prevention services, including these services with coverage at 100% will **increase** the employer's plan cost by $1.19 or 1.1%.	-	N/A	Cost-saving
	0.0%	The PPO Benchmark Model excludes coverage for these services. Adding coverage for these services is estimated to be **cost neutral**.	-	N/A	Cost-saving
	0.6%	The PPO Benchmark Model excludes coverage for these services. Adding coverage for these services and eliminating cost-sharing is estimated to **increase** the employer's plan cost by 0.6%.	-	N/A	Cost-saving
	0.1%	The PPO Benchmark Model excludes coverage for these services. Adding coverage for these services and eliminating cost-sharing is estimated to **increase** the employer's plan cost by 0.1%.	-	N/A	Breastfeeding promotion: cost-saving
	1.3%	The PPO Benchmark Model excludes coverage for these services. Adding coverage for these services and eliminating cost-sharing are estimated to **increase** the employer's cost by 1.3%.	-	N/A	Cost-saving or cost-effective

Figure 2F: Pricing Analysis of the Maternal and Child Health Plan Benefit Model (PPO Plan Design)

PPO Benchmark Model Costs and Changes to Meet Minimum Plan Benefit Model Recommendations							
PPO Estimate (2007 Year Dollars)	Current Cost Estimate^^ Average 2007 PPO Cost Per Member Per Month (PMPM)			Current Cost Estimate^^ Average 2007 PPO Cost			
Plan Benefit Model Recommendations^	Total Costs (PMPM)	Paid by Members (PMPM)	Paid by Employer (PMPM)	Employer Impact of Plan Benefit Model (PMPM)	Total Employer-Adjusted Cost of Plan Benefit Model (PMPM)	Member Impact of Plan Benefit Model (PMPM)	
II. Recommended Levels of Care for Physician/Practitioner Services							
a. Services Delivered by a Primary Care Provider	$26.76	$10.05	$16.70	$2.13	$18.83	$(2.13)	
b. Services Delivered by a Mental Health/Substance Abuse Provider	$5.34	$1.06	$4.28	$0.91	$5.19	$(0.13)	
c. Services Delivered by a Specialty Provider or Surgeon	$74.70	$14.84	$59.86	$2.47	$62.33	$(2.47)	
d. E-Visits and Telephonic Visits	N/A	N/A	N/A	N/A	N/A	N/A	
Category Sub-Total:				$5.51		$(4.73)	
III. Emergency Care, Hospitalization, and Other Facility-Based Care							
a. Emergency Room Services	$19.84	$3.90	$15.94	$1.82	$17.76	$(1.82)	
b. Inpatient Substance Abuse Detoxification	$1.17	$0.12	$1.05	$-	$1.05	$-	
c. Inpatient Hospital Service: General Inpatient / Residential Care (Including Mental Health / Substance Abuse)	$84.44	$9.00	$75.44	$0.30	$75.74	$(0.30)	
d. Inpatient Hospital Service or Birth Center Facilities: Labor / Delivery	$15.21	$1.62	$13.59	$-	$13.59	$-	
e. Ambulatory Surgical Facility or Outpatient Hospital Services	$81.02	$15.93	$65.09	$-	$65.09	$-	
f. Mental Health / Substance Abuse Partial-Day Hospital (or Day Treatment) or Intensive Outpatient Services	$0.24	$0.03	$0.21	$-	$0.21	$-	
Category Sub-Total:				$2.12		$(2.12)	

Per Member Per Month (PMPM)			Coinsurance	Coinsurance Frequency	Estimated Cost-Offset
	Percent Employer Change From Current Cost Estimate (% of Total)*	*Rationale for Change From Current Cost Estimate			
	0.7%	The PPO Benchmark Model includes a deductible and 20% member coinsurance. Reducing the coinsurance to 10% is estimated to **increase** the employer's cost by 0.7%.	10%	per visit	N/A
	0.3%	The PPO Benchmark Model includes 20% member coinsurance. Reducing the coinsurance to 10% is estimated to **increase** the employer's cost by 0.1%. If an employer's PPO has a maximum of 30 mental health visits per year, removing this maximum will **increase** employers cost by $0.61 or 0.20%, assuming a typical level of managed care.	10%	per visit	N/A
	0.8%	The PPO Benchmark Model includes a deductible and 20% member coinsurance. Reducing the coinsurance to 15% is estimated to **increase** the employer's plan cost by 0.8%.	10% or 15%	per visit	N/A
	N/A		Left to TPA	per visit	N/A
	1.8%				
	0.6%	The PPO Benchmark Model includes 20%-25% member coinsurance and this range is consistent with the Plan Benefit Model (cost neutral). Reducing the urgent care coinsurance to 10% is estimated to **increase** the employer's cost by 0.6%.	20% or 25%	per visit	N/A
	0.0%	The PPO Benchmark Model includes a deductible. Eliminating the deductible will result in a negligible increase to the employer's plan cost **(cost neutral)**.	25%	per episode	N/A
	0.1%	The PPO Benchmark Model includes a deductible. Eliminating the deductible is estimated to **increase** the employer's plan cost by 0.1%.	25%	per episode	N/A
	0.0%	The PPO Benchmark Model includes a deductible. Eliminating the deductible will result in a negligible increase to the employer's plan cost **(cost neutral)**.	25%	per episode	N/A
	0.0%	The PPO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral)**.	20%	per episode	N/A
	0.0%	The PPO Benchmark Model includes a deductible. Eliminating the deductible will result in a negligible increase to the employer's plan cost **(cost neutral).** This cost estimate assumes there are no changes in managed care practices.	20%	per episode	N/A
	0.7%				

Figure 2F: Pricing Analysis of the Maternal and Child Health Plan Benefit Model (PPO Plan Design)

PPO Benchmark Model Costs and Changes to Meet Minimum Plan Benefit Model Recommendations								
PPO Estimate (2007 Year Dollars)	Current Cost Estimate^^ Average 2007 PPO Cost Per Member Per Month (PMPM)			Current Cost Estimate^^ Average 2007 PPO Cost				
Plan Benefit Model Recommendations^	Total Costs (PMPM)	Paid by Members (PMPM)	Paid by Employer (PMPM)	Employer Impact of Plan Benefit Model (PMPM)	Total Employer-Adjusted Cost of Plan Benefit Model (PMPM)	Member Impact of Plan Benefit Model (PMPM)	Percent Employer Change From Current Cost Estimate (% of Total)*	
IV. Therapeutic Services / Ancillary Services								
a. Prescription Drugs	$58.23	$21.16	$37.06	$-	$37.06	$-	0.0%	
b. Dental Services	$18.90	$5.01	$13.90	$3.11	$17.01	$-	1.0%	
c. Vision Services	$4.77	$1.73	$3.03	$1.73	$4.77	$-	0.6%	
d. Audiology Services	$2.25	$0.50	$1.75	$-	$1.75	$-	0.0%	
e. Nutritional Services				$1.22	$1.22	$0.35	0.4%	
f. Occupational, Physical, and Speech Therapy Services	$1.43	$0.31	$1.12	$0.23	$1.35	$(0.23)	0.1%	
g. Infertility Services	$7.42	$1.47	$5.94	$-	$5.94	$-	0.0%	
h. Home Health Services	$1.43	$0.52	$0.91	$-	$0.91	$-	0.0%	
i. Hospice Care	$0.11	$0.02	$0.08	$-	$0.08	$-	0.0%	
j. Durable Medical Equipment & Supplies	$2.71	$0.98	$1.72	$0.55	$2.27	$0.06	0.2%	
- Medical Foods				$0.11	$0.11	$0.03	0.0%	
k. Transportation Services	$0.70	$0.26	$0.45	$-	$0.45	$-	0.0%	
Category Sub-Total:				$6.95		$0.21	2.3%	
V. Laboratory Diagnostic, Assessment, and Testing Services								
a. Laboratory Services	$8.71	$1.93	$6.78	$-	$6.78	$-	0.0%	
b. Diagnostic, Assessment, and Testing (Medical and Psychological) Services	$10.17	$2.12	$8.04	$-	$8.04	$-	0.0%	
Category Sub-Total:				$0.00		$0.00	0.0%	

Per Member Per Month (PMPM)		Coinsurance	Coinsurance Frequency	Estimated Cost-Offset
	*Rationale for Change From Current Cost Estimate			
	The PPO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral)**.	Tiered	per fill/re-fill	N/A
	The PPO Benchmark Model includes member coinsurance for restorative and orthodontic procedures (20% and 50% respectively). Decreasing the coinsurance to 15% and setting the annual maximum benefit at $5,000 will **increase** the employer's plan cost by 1.0%.	15%	per visit	N/A
	The PPO Benchmark Model includes a deductible and 20% member coinsurance. Eliminating the deductible and decreasing the coinsurance to 15% will **increase** the employer's plan cost by 0.6%.	15%	per visit	N/A
	The PPO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral)**.	15%	per visit	N/A
	The PPO Benchmark Model excludes coverage for these services. Adding coverage for these services will **increase** the employer's plan cost by 0.4%.	15%	per visit	N/A
	The PPO Benchmark Model includes a deductible and 20% member coinsurance. Eliminating the deductible, decreasing the coinsurance to 15%, and increasing the annual visit limit from 60 visits to 75 visits will **increase** the employer's plan cost by 0.1%.	15%	per visit	N/A
	The PPO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral)**. If a plan does not currently provide coverage for these services, including these services with 25%+ member coinsurance will **increase** the employer's plan cost by $5.94 or 2.0%.	25%	per visit/unit or per cycle	N/A
	The PPO Benchmark Model includes 20% member coinsurance. Reducing the coinsurance to 10% will result in a negligible increase to the employer's plan cost **(cost neutral)**.	15%	per visit	N/A
	The PPO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral)**.	25%	one-time	N/A
	The PPO Benchmark Model excludes coverage for hearing aids. Adding coverage for hearing aids will **increase** the employer's plan cost 0.2%.	10%	per unit	Cochlear ear implants: cost-effective
	The PPO Benchmark Models excludes coverage for medical foods. Adding coverage for medical foods will result in a negligible increase to the employer's plan cost **(cost neutral)**.	10%	per unit	Donor breast milk: cost-saving for limited populations
	The PPO Benchmark Model is consistent with the Plan Benefit Model **(cost neutral)**.	15% or 25%	per use	N/A
	The PPO Benchmark Model is consistent with the Plan Benefit Model (cost neutral).	10% - 25%	per battery	N/A
	The PPO Benchmark Model is consistent with the Plan Benefit Model (cost neutral).	10% - 25%	per battery	N/A

Figure 2F: Pricing Analysis of the Maternal and Child Health Plan Benefit Model (PPO Plan Design)

PPO Benchmark Model Costs and Changes to Meet Minimum Plan Benefit Model Recommendations							
PPO Estimate (2007 Year Dollars)	Current Cost Estimate^^ Average 2007 PPO Cost Per Member Per Month (PMPM)			Current Cost Estimate^^ Average 2007 PPO Cost Per Member Per Month (PMPM)			
Plan Benefit Model Recommendations^	Total Costs (PMPM)	Paid by Members (PMPM)	Paid by Employer (PMPM)	Employer Impact of Plan Benefit Model (PMPM)	Total Employer-Adjusted Cost of Plan Benefit Model (PMPM)	Member Impact of Plan Benefit Model (PMPM)	Percent Employer Change From Current Cost Estimate (% of Total)*
Plan Design Total				$30.31	$334.10	$(9.50)	10.0%
Estimated Impact of Plan Benefit Model							
Impact of Plan Benefit Model Recommendations (Benefit Additions and Modifications):				$20.81	6.9%		
Impact From Cost-Shifting to Employer/From Member:				$9.50	3.1%	$(9.50)	-11.0%
			Total:	**$30.31**	**10.0%**		
PPO Benchmark Model Costs							
Total Per Member Per Month (PMPM)	$390.31	$86.52	$303.79	$30.31		$(9.50)	
Total Per Employee Per Month (PEPM)	$819.65	$181.69	$637.96	$63.66		$(19.95)	
Total Per Employee Per Year (PEPY)	$9835.9	$2180.33	$7655.56	$763.89		$(239.40)	

Notes

1. The term "member" represents employees and dependents. The Benchmark Model costs are summarized on a per member per month (PMPM) basis.
2. The Benchmark Model average costs shown in this table are for a PPO plan with the following member cost-sharing specifications:
   - Medical services other than prescription drugs: $250 deductible, 20% coinsurance, subject to a $2,500 out-of-pocket limit.
   - Prescription drugs: $10 copay for generic and $25 copay for brand prescriptions (mail order = 2 times retail).
   - Dental services: $50 deductible, 0%/20%/50% coinsurance for preventive/restorative/orthodontic services, with a $2,500 maximum benefit per year.
3. A given employer's health plan costs may vary from the rates shown above due to differences in plan design, member demographics, provider payment rates, or level of managed care practices for medical and mental health services.
4. Unless otherwise noted, changes in coverage to meet the minimum Plan Benefit Model recommendations are applicable to all members.

   *Cost estimates for select Plan Benefit Model recommendations are based on assumptions developed by the Business Group for (a) the degree to which the service is currently covered by large-employer health plans, and (b) the prevalence of the condition the service seeks to address.

2 Maternal and Child Health Plan Benefit Model: Evidence-Informed Coverage

Maternal and Child Health Plan Benefit Model

Index of Services

Sample Plan Benefit Key

<table>
<tr><th colspan="4">Recommended Plan Benefits: One of Five Types of Service</th></tr>
<tr><th colspan="4">The Specific Type of Benefit</th></tr>
<tr><th colspan="2">Definition of Benefit</th><th colspan="2">Covered Providers</th></tr>
<tr><td colspan="2">A summary definition of the type of benefit and/or rationale for including the benefit.</td><td colspan="2">Covered providers and/or related benefit information.</td></tr>
<tr><th>Recommended Benefit Coverage Limits</th><th>Recommended Exceptions</th><th>Inclusions</th><th>Exclusions</th></tr>
<tr><td>Typically expressed as the maximum amount of benefit covered by the plan.</td><td>Plan provisions that reflect unique circumstances and allow for exceptions to be made.</td><td>Particular benefits that should be covered by the type of benefit.</td><td>Particular benefits that should not be covered by the type of benefit.</td></tr>
<tr><th>Recommended Cost-Sharing</th><th>Copayment / Coinsurance Level (0-5 / 0%-25%)</th><th colspan="2">Out-of-Pocket Maximum</th></tr>
<tr><td>Recommendation on copayment (HMO model) or coinsurance (PPO model) amount.</td><td>Recommended copayment and coinsurance (in-network) levels correspond to the key summarized below:

Copayment / Coinsurance
0 = $0 / = 0%
1 = $10 – $20 / = 10%
2 = $25 – $40 / = 15%
3 = $45 – $60 / = 20%
4 = $75 - $100 / = 25%
5 = $100+ / = 25%+</td><td colspan="2">Denotes whether individual expenses apply to the maximum expense paid per individual or per family in a single calendar year. After that amount is reached, the health plan will pay 100% of covered charges for the remainder of the calendar year.

Individual (1): $1,500
Individual plus one (2): $3,000
Family (3+): $4,500</td></tr>
<tr><td rowspan="2">Actuarial Impact</td><th>Cost of Recommended Benefits (PMPM)</th><th colspan="2">Cost Impact</th></tr>
<tr><td>The per member per month (PMPM) estimate of the total employer cost of the benefit as it is described in this plan.</td><td>One of the following:
• Decrease
• Neutral
• Increase</td><td>The estimated employer cost impact will be influenced by an individual employer's health plan design and administration rules. If an employer's current health plans were identical to the HMO/PPO Benchmark Model and the employer were to adopt all of the Plan Benefit Model recommendations, the employer's health plan costs would increase 10% and 6.2%, respectively. Cost-offset values associated with preventive services are excluded from this calculation.</td></tr>
<tr><th colspan="4">Citations</th></tr>
<tr><td>Source</td><td>Actual reference</td><td colspan="2">The strength of the reference, which will be one of the following:
1. Evidence-Based Research
2. Recommended Guidance (e.g., Expert Opinion, Expert Consensus, Expert Panel)
3. Federally Vetted
4. Industry Standard
5. Actuarial Analysis</td></tr>
</table>

I. Recommended Minimum Plan Benefits: Preventive Services

A. WELL-CHILD SERVICES

Definition of Benefit	Covered Providers
Medical services designed to promote and protect the health of infants, children, and adolescents. These services include comprehensive health assessments; age-appropriate screening, counseling, preventive medication, and preventive treatment; parent and child education; and anticipatory guidance.[1]	Covered services must be furnished by or under the direction of a primary care provider (family physician, pediatrician, nurse practitioner, general practitioner, internal medicine physician).

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
26 visits between birth and 21 years of age.[1]	Include provisions for children with complex case-management needs (e.g., flex benefits).	All appropriate preventive care. Medical necessity supported by the Plan Benefit Model definition.	All others as defined by the health plan.

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
None	0 / 0%	N/A

Actuarial Impact[2]	Cost of Recommended Benefits (PMPM)	Cost Impact
	$ 2.24 (HMO) $ 2.24 (PPO)	The HMO Benchmark Model includes a $10 copayment. The PPO Benchmark Model includes a deductible and 20% member coinsurance. Eliminating cost-sharing for both plans is estimated to **increase** the employer's plan cost by: • $0.37 PMPM / 0.1% of total plan costs (HMO) • $0.84 PMPM / 0.3% of total plan costs (PPO)

Citations

1. Bright Futures Recommendation	Hagan JF, Shaw JS, Duncan P, eds. *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents,* 3rd edition. Elk Grove Village, IL: American Academy of Pediatrics; 2007.	Recommended Guidance: Expert Opinion
2. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

I. Recommended Minimum Plan Benefits: Preventive Services

B. IMMUNIZATIONS

Definition of Benefit	Covered Providers
Screening for susceptibility to vaccine-preventable diseases, immunizations, and related services.[1]	Covered services must be furnished by or under the direction of a primary care provider (family physician, pediatrician, nurse practitioner, general practitioner, internal medicine physician), physician's assistant, certified nurse midwife, OB-GYN, or other qualified provider.

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
No limits for children and adolescents (0 to 21 years), women planning a pregnancy, and women who are pregnant.[1,2]	N/A	• All immunizations and associated care recommended by the Advisory Committee on Immunization Practices (ACIP).[A] • Immunizations to address travel, occupational, and other high-risk activities. [A]	All others as defined by the health plan.

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
No cost-sharing for ACIP recommended routine and high-risk immunizations; minimal cost-sharing for travel immunizations.	0 / 0% (general); 1 / 10% (travel)	Copayment and coinsurance amounts apply toward maximum.

Actuarial Impact[3]	Cost of Recommended Benefits (PMPM)	Cost Impact
	$ 2.21 (HMO) $ 2.21 (PPO)	The HMO Benchmark Model is consistent with the Plan Benefit Model (cost **neutral**). The PPO Benchmark Model includes a deductible and 20% member coinsurance. Eliminating the deductible and coinsurance are estimated to **increase** the employer's cost by: • $.83 PMPM / 0.3% of total plan costs (PPO)

Citations

1. Advisory Committee on Immunization Practices	Centers for Disease Control and Prevention. General recommendations on immunization: recommendations of the Advisory Committee on Immunization Practices and the American Academy of Family Physicians. *MMWR*. 2006; 55(No. RR-15):1-48.	Recommended Guidance
2. American Academy of Pediatrics	American Academy of Pediatrics. Pickering LK, Backer CJ, Long SS, McMillan JA, eds. *Red Book: 2006 Report of the Committee on Infectious Diseases*, 27th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2006.	Recommended Guidance: Expert Opinion
3. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model*. Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

[A] The Advisory Committee on Immunization Practices (ACIP) releases updated recommendations on immunizations at regular intervals. Employers should instruct their health plan administrator(s) to provide coverage for newly-recommended immunizations immediately following approval from ACIP.

I. Recommended Minimum Plan Benefits: Preventive Services

C. PREVENTIVE DENTAL SERVICES

Definition of Benefit	Covered Providers
Covered preventive services include risk assessments and anticipatory guidance in order to promote oral health,[1] oral examinations, and diagnostic procedures.[2]	Covered services must be furnished by or under the direction of a licensed dentist or licensed dental hygienist. Licensed dental hygienists must be overseen by a dentist or primary care provider or operate in conformance with state regulation for the independent practice of preventive dentistry. Risk assessments, anticipatory guidance, and fluoride varnish may be performed by a primary care provider.

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
One preventive visit during the first 12 months of life [1,2]; 2 visits per calendar year for all beneficiaries aged 2 to 21 years [2,5]; 1 visit during the preconception period and 1 visit during pregnancy for all women.[5] Additional visits to implement and maintain preventive equipment (e.g., space maintainer) and procedures are covered, as medically necessary.	N/A	All appropriate preventive care, including: • Prophylaxis (cleaning of teeth) – limited to 2 treatments per calendar year.[2,3] • Sealants – (once every 3 years, from the last date of service, on permanent molars for children under age 16).[2,3] • Space maintainer (primary teeth only).[3] • Bitewing x-rays (one set per calendar year).[2,3] • Complete series x-rays (one complete series every 3 years).[2,3] • Periapical x-rays[2,3] • Routine oral evaluations (limited to 2 per calendar year).[2,3] • Fluoride varnish or gel applications (1 treatment per calendar year for children under age 16 at low or average risk; 4 treatments per calendar year for children under age 16 at moderate or high risk).[4] • Fluoride supplementation.[2, 6]	All others as defined by the health plan. *Please refer to the "Dental Services" benefit for additional coverage guidelines.*

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
None	0 / 0%	N/A

Actuarial Impact[7]	Cost of Recommended Benefits (PMPM)	Cost Impact
	$ 6.86 (HMO) $ 7.60 (PPO)	The HMO and PPO Benchmark Models are consistent with the Plan Benefit Model (cost **neutral**).

Citations

1. Bright Futures Recommendation	Hagan JF, Shaw JS, Duncan P, eds. *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents,* 3rd edition. Elk Grove Village, IL: American Academy of Pediatrics; 2007.	Recommended Guidance: Expert Opinion
2. American Academy of Pediatric Dentistry	American Academy of Pediatric Dentistry. Guideline on Periodicity of Examination, Preventive Dental Services, Anticipatory Guidance, and Oral Treatment for Children. Revised 2003. American Academy of Pediatric Dentistry. Clinical Affairs Committee – Infant Oral Health Subcommittee Guidelines on Infant Oral Health Care. Revised 2004.	Recommended Guidance: Expert Opinion
3. Federal Employee Health Benefit Plan	U.S. Office of Personnel Management, Federal Employees Health Benefits Program. S*ample plan characteristics (Aetna: Individual practice plan with a consumer driven health plan option and a high deductible health plan option).*Available at: https://www.opm.gov/insure/07/brochures/pdf/73-828.pdf. Accessed on January 15, 2007.	Federally Vetted
4. American Dental Association	Evidence Based Clinical Recommendations: Professionally Applied Topical Fluoride. Report of the Council on Scientific Affairs, ADA May 2006.	Recommended Guidance: Expert Opinion
5. Maternal and Family Health Benefits Advisory Board	Maternal and Family Health Benefits Advisory Board. Washington, DC: National Business Group on Health; August 2007.	Recommended Guidance: Expert Opinion
6. U.S. Preventive Services Task Force	U.S. Preventive Services Task Force. *Dental caries screening in preschool children: Summary of recommendation.* Rockville, MD: Agency for Healthcare Research and Quality; 2004. Available at: http://www.ahrq.gov/clinic/uspstf/uspsdnch.htm. Accessed on June 1, 2007.	Evidence-Based Research
7. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

I. Recommended Minimum Plan Benefits: Preventive Services

D. EARLY INTERVENTION SERVICES FOR MENTAL HEALTH / SUBSTANCE ABUSE

Definition of Benefit	Covered Providers
Medical services designed to educate and counsel individuals and families about behaviors that facilitate mental health, improve personal resiliency, facilitate early intervention and prevent the escalation of sub-clinical problems, and monitor and treat V-code conditions.	Covered services must be furnished by or under the direction of a primary care provider (family physician, pediatrician, nurse practitioner) or a mental health professional (psychiatrist, clinical psychologist, licensed clinical social worker, licensed professional counselor, psychiatric nurse practitioner).[1]

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
8 visits per calendar year [2]	Include provisions for children with complex case-management needs (e.g., flex benefits). Consider extending benefit for multiple providers.	Screening (including family psychosocial screening), monitoring, and treatment of DSM-IV V-code conditions.	All others as defined by the health plan. *Please refer to the "Mental Health / Substance Abuse" benefit for additional coverage information.*

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
None	0 / 0%	N/A

	Cost of Recommended Benefits (PMPM)	Cost Impact
Actuarial Impact[3]	$ 4.83 (HMO) $ 5.85 (PPO)	The HMO and PPO Benchmark Models exclude coverage for these services. Adding coverage for these services is estimated to **increase** the employer's plan cost by: • $4.83 PMPM / 1.7% of total plan costs (HMO) • $5.43 PMPM / 1.9% of total plan costs (PPO)

Citations

1. U.S. Department of Health and Human Services, Bureau of Health Professionals	U.S. Department of Health and Human Services, Bureau of Health Professionals. *Health Professional Shortage Area Guidelines for Mental Health Care Designation.* Available at: http://bhpr.hrsa.gov/shortage/hpsaguidement.htm. Accessed on January 12, 2007.	Recommended Guidance
2. Maternal and Family Health Benefits Advisory Board	Maternal and Family Health Benefits Advisory Board. Washington, DC: National Business Group on Health; August 2007.	Recommended Guidance: Expert Opinion
3. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. Actuarial analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model. Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

I. Recommended Minimum Plan Benefits: Preventive Services

E. PREVENTIVE VISION SERVICES

Definition of Benefit	Covered Providers
Medical services designed to identify children who may have eye or vision abnormalities, or risk factors for developing eye problems. Examination of the eyes should be performed beginning in the newborn period and at all subsequent well-child care visits. Additional preventive vision screening is recommended for children who are unable to be screened in well-child care due to time or health constraints.[1]	Covered services must be furnished by or under the direction of a primary care provider (family physician, pediatrician, nurse practitioner, general practitioner, internal medicine physician).

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
2 visits outside of regular well-child care[A] between birth and age 5.[1-3]	Include provisions for children with complex case-management needs (e.g., flex benefits).	Screening to detect amblyopia, strabismus, and defects in visual acuity in children younger than age 5 years.[2] Exams include: visual acuity tests, stereopsis, vision history, external eye inspection, ophthalmoscopic examination, tests for ocular muscle motility and eye muscle imbalances, and monocular distance acuity.[3]	All others as defined by the health plan. *Please refer to the "Vision Services" benefit for additional coverage information.*

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
None	0 / 0%	N/A

	Cost of Recommended Benefits (PMPM)	Cost Impact
Actuarial Impact[4]	$ 0.32 (HMO) $ 0.39 (PPO)	The HMO and PPO Benchmark Models exclude coverage for these services. Adding coverage for these services is estimated to **increase** the employer's plan cost by: • $0.32 PMPM / 0.1% of total plan costs (HMO) • $0.39 PMPM / 0.1% of total plan costs (PPO)

Citations

1. American Academy of Ophthalmology	American Academy of Ophthalmology. Pediatric eye evaluations. Preferred Practice Pattern. *AAO*; 2002.	Recommended Guidance: Practice Guideline
2. U.S. Preventive Services Task Force	U.S. Preventive Services Task Force. *Guide to Clinical Preventive Services*. 3rd ed. Rockville, MD: Agency for Healthcare Research and Quality; 2003.	Evidence-Based Research
3. American Academy of Pediatrics; American Association of Certified Orthoptists; American Association for Pediatric Ophthalmology and Strabismus; American Academy of Ophthalmology	Committee on Practice and Ambulatory Medicine, Section on Ophthalmology. American Association of Certified Orthoptists; American Association for Pediatric Ophthalmology and Strabismus; American Academy of Ophthalmology. Eye examination in infants, children, and young adults by pediatricians. *Pediatrics*; 2003 Apr;111(4 Pt 1):902-7.	Recommended Guidance
4. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model*. Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

[A] Most children and adolescents receive routine vision screening during the course of well-child care. However, young children who are uncooperative, children with special needs, and children who miss or delay well-child care need access to vision screening outside of designated preventive visits. The "Preventive Vision Services" screening benefit is designed to support this need.

I. Recommended Minimum Plan Benefits: Preventive Services

F. PREVENTIVE AUDIOLOGY SCREENING SERVICES

Definition of Benefit	Covered Providers
Medical services to detect and diagnose speech, hearing, and language disorders.	Covered services must be furnished by or under the direction of a primary care provider (family physician, pediatrician, nurse practitioner, general practitioner, internal medicine physician) or a covered specialist (audiologist or speech pathologist).

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
3 visits between birth and 19 years of age. Services must be rendered during the course of a well-child care visit or with referral from a PCP to a covered specialist.[1]	Include provisions for children with complex case-management needs (e.g., flex benefits).	All appropriate preventive care. Medical necessity supported by the Plan Benefit Model definition.	All others as defined by the health plan.

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
None	0 / 0%	N/A

Actuarial Impact[2]	Cost of Recommended Benefits (PMPM)	Cost Impact
	$ 0.32 (HMO) $ 0.39 (PPO)	The HMO and PPO Benchmark Models exclude coverage for these services. Adding coverage for these services is estimated to **increase** the employer's plan cost by: • $0.32 PMPM / 0.1% of total plan costs (HMO) • $0.39 PMPM / 0.1% of total plan costs (PPO)

Citations

1. Maternal and Family Health Benefits Advisory Board	Maternal and Family Health Benefits Advisory Board. Washington, DC: National Business Group on Health; August 2007.	Recommended Guidance: Expert Opinion
2. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model*. Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

I. Recommended Minimum Plan Benefits: Preventive Services

G. UNINTENDED PREGNANCY PREVENTION SERVICES

Definition of Benefit	Covered Providers
Medical services designed to facilitate the prevention of unintended pregnancies and promote healthy approaches to family planning.[1]	Covered services must be furnished by or under the direction of a primary care provider (family physician, pediatrician, nurse practitioner, general practitioner, internal medicine physician), a certified nurse midwife, or an OB-GYN.

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
No limits on counseling services when provided by an approved provider. No limits on medications, procedures, or devices when prescribed by an approved provider.	N/A	Covered services include[2]: • **All** FDA-approved prescription contraceptive methods (e.g., pills, patches, IUDs, diaphragms, and vaginal rings), and voluntary sterilization (e.g., tubal ligation, vasectomy). • Abortion and all related services. • Medically appropriate laboratory examinations and tests, counseling services, and patient education.	All others as defined by the health plan. *Please refer to "Preventive Services (General)" and "Laboratory Diagnostic, Assessment, and Testing Services" for information on coverage for STI screening and counseling.*

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
None	0 / 0%	N/A

Actuarial Impact[3]	Cost of Recommended Benefits (PMPM)	Cost Impact
	$ 3.07 (HMO) $ 3.42 (PPO)	The HMO Benchmark Model is consistent with the Plan Benefit Model (cost **neutral**). The PPO Benchmark Model includes a deductible and 20% member coinsurance. Eliminating the deductible and coinsurance will increase the employer's plan cost by: • $1.19 PMPM / 0.4% of total plan costs (PPO)

Citations

1. Kaiser Family Foundation	The Henry J. Kaiser Foundation. *Medicaid Benefits: Online Database, Benefits by Service, Definition / Notes (October, 2004).* Available at: http://www.kff.org/medicaid/benefits/service_main.jsp. Accessed January 15, 2007.	Industry Standard
2. Federal Employee Health Benefit Plan	U.S. Office of Personnel Management, Federal Employees Health Benefits Program. *Sample plan characteristics (Aetna: Individual practice plan with a consumer driven health plan option and a high deductible health plan option).* Available at: https://www.opm.gov/insure/07/brochures/pdf/73-828.pdf. Accessed on January 17, 2007.	Federally Vetted
3. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

I. Recommended Minimum Plan Benefits: Preventive Services

H. PREVENTIVE PRECONCEPTION CARE

Definition of Benefit		Covered Providers	
Medical services aimed at improving the health outcomes of pregnant women and infants by promoting the health of women of reproductive age *prior* to conception.[1]		Covered services must be furnished by or under the direction of a primary care physician (family physician, general practitioner, internal medicine physician, OB-GYN[A]), nurse practitioner, or a medical professional who is licensed to provide pregnancy-related primary care services (e.g., certified nurse midwife).	
Recommended Benefit Coverage Limits	**Recommended Exceptions**	**Inclusions**	**Exclusions**
2 preconception care visits per calendar year[1]	Include provisions for women with complex case-management needs (e.g., flex benefits).	All appropriate preventive care. Medical necessity supported by the Plan Benefit Model definition.	All others as defined by the health plan.
Recommended Cost-Sharing	**Copayment / Coinsurance Level (0-5 / 0-25%)**	**Out-of-Pocket Maximum**	
None	0 / 0%	N/A	
Actuarial Impact[2]	**Cost of Recommended Benefits (PMPM)**	**Cost Impact**	
	N/A (already included in standard office visit estimate)	The HMO and PPO Benchmark Models exclude coverage for these services. Adding coverage for these services is estimated to be cost **neutral**.	

Citations		
1. Centers for Disease Control and Prevention	Centers for Disease Control and Prevention. *Recommendations to Improve Preconception Health and Health Care --- United States A Report of the CDC/ATSDR Preconception Care Work Group and the Select Panel on Preconception Care.* Available at: http://www.cdc.gov/MMWR/preview/mmwrhtml/rr5506a1.htm. Accessed on September 1, 2007.	Recommended Guidance: Expert Opinion
2. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

[A] Obstetricians and gynecologists (OB-GYNs) are considered "primary care providers" only when they are providing preconception, prenatal, and postpartum care. They are considered "medical specialists" when providing all other types of services. Copayment/coinsurance amounts should be adjusted accordingly.

I. Recommended Minimum Plan Benefits: Preventive Services

I. PREVENTIVE PRENATAL CARE

Definition of Benefit	Covered Providers
Prenatal care: Medical services designed to facilitate the health of a pregnant woman or fetus, or that have become necessary as a result of pregnancy. Covered services may also address conditions that might complicate a pregnancy, threaten a woman's ability to carry the fetus to term, or deliver the fetus safely.[1] **Prenatal pediatric care:** A single visit designed to allow a pediatrician (or other primary care provider) to gather basic information from parents, provide information and advice, and identify high-risk situations in which parents may need to be referred to appropriate resources for help.[2] This visit is relevant only in situations where the infant's primary care provider did not provide prenatal care to the infant's mother.	Covered services must be furnished by or under the direction of a primary care physician (family physician, general practitioner, internal medicine physician, OB-GYN[A]), nurse practitioner, or a medical professional who is licensed to provide pregnancy-related primary care services (e.g., certified nurse midwife).

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
20 prenatal care visits[1] 1 prenatal pediatric visit[2]	Include provisions for women with complex case-management needs (e.g., flex benefits).	All appropriate preventive care including all routine screening and diagnostic tests (e.g., amniocentesis, chorionic villus sampling, etc). Medical necessity supported by the Plan Benefit Model definition.	All others as defined by the health plan.

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
None	0 / 0%	N/A

	Cost of Recommended Benefits (PMPM)	Cost Impact
Actuarial Impact[3]	$ 1.61 (HMO) $ 1.95 (PPO)	The HMO and PPO Benchmark Models exclude coverage for these services. Adding coverage for these services is estimated to **increase** the employer's plan cost by: • $1.61 PMPM / 0.6% of total plan costs (HMO) • $1.95 PMPM / 0.6% of total plan costs (PPO)

Citations

1. American Academy of Pediatrics & American College of Obstetricians and Gynecologists	American Academy of Pediatrics & American College of Obstetricians and Gynecologists. *Guidelines for Perinatal Care,* 5th ed. Elk Grove Village, IL; American Academy of Pediatrics & American College of Obstetricians and Gynecologists; October 2002. (Source recommends 15 prenatal care visits, plus one per week after week 40)	Recommended Guidance: Expert Opinion
2. American Academy of Pediatrics	Committee on Psychosocial Aspects of Child and Family Health. Policy statement: The prenatal visit. Pediatrics. 2001; 107(6):1456-1458. American Academy of Pediatrics. Pickering LK, Backer CJ, Long SS, McMillan JA, eds. *Red Book: 2006 Report of the Committee on Infectious Diseases,* 27th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2006.	Recommended Guidance: Expert Opinion
3. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

[A] Obstetricians and gynecologists (OB-GYNs) are considered "primary care providers" only when they are providing preconception, prenatal, and postpartum care. They are considered "medical specialists" when providing all other types of services. Copayment/coinsurance amounts should be adjusted accordingly.

I. Recommended Minimum Plan Benefits: Preventive Services

J. PREVENTIVE POSTPARTUM CARE

Definition of Benefit	Covered Providers
Medical services that are necessary for the health of the woman post-pregnancy and/or the newborn infant.[1]	Covered services must be furnished by or under the direction of a primary care physician (family physician, general practitioner, internal medicine physician, OB-GYN[A]), nurse practitioner, or a medical professional who is licensed to provide pregnancy-related primary care services (e.g., certified nurse midwife). In addition, lactation consultants credentialed by the International Board of Lactation Consultant Examiners (IBCLCs) are approved for the provision of breastfeeding counseling, training, and support.[3]

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
One postpartum care visit per pregnancy (delivered between 21 and 56 days after delivery). [2] 5 lactation consultation visits per pregnancy. [3, B]	N/A	All appropriate preventive care. Medical necessity supported by the Plan Benefit Model definition. Lactation benefit supported by medical necessity of mother *or* infant.	All others as defined by the health plan.

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
None	0 / 0%	N/A

Actuarial Impact[4]	Cost of Recommended Benefits (PMPM)	Cost Impact
	$ 0.32 (HMO) $ 0.39 (PPO)	The HMO and PPO Benchmark Models exclude coverage for these services. Adding coverage for these services is estimated to **increase** the employer's plan cost by: • $0.32 PMPM / 0.1% of total plan costs (HMO) • $0.39 PMPM / 0.1% of total plan costs (PPO)

Citations		
1. Kaiser Family Foundation	The Henry J. Kaiser Foundation. Medicaid Benefits: *Online Database, Benefits by Service, Definition / Notes (October, 2004).* Available at: http://www.kff.org/medicaid/benefits/service_main.jsp. Accessed on January 15, 2007.	Industry Standard
2. American Academy of Pediatrics & American College of Obstetricians and Gynecologists	American Academy of Pediatrics & American College of Obstetricians and Gynecologists. *Guidelines for Perinatal Care.* 5th ed. Elk Grove Village, IL; American Academy of Pediatrics & American College of Obstetricians and Gynecologists; October 2002.	Recommended Guidance: Expert Opinion
3. United States Breastfeeding Committee	Association of Women's Health, Obstetric and Neonatal Nurses. *United States Breastfeeding Committee Recommendations.* Available at: http://www.usbreastfeeding.org/breastfeeding/index.htm. Accessed on February 1, 2007.	Recommended Guidance
4. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

[A] Obstetricians and gynecologists (OB-GYNs) are considered "primary care providers" only when they are providing preconception, prenatal, and postpartum care. They are considered "medical specialists" when providing all other types of services. Copayment/coinsurance amounts should be adjusted accordingly.

[B] Lactation consultation visits may be used at any point during pregnancy and in the year after birth.

I. Recommended Minimum Plan Benefits: Preventive Services

K. PREVENTIVE SERVICES (GENERAL)

Definition of Benefit	Covered Providers
Medical services that are designed to detect the existence of, or risk for, diseases, conditions, and problems in asymptomatic people.	Covered services must be furnished by or under the direction a primary care provider (family physician, general practitioner, internal medicine physician, nurse practitioner, pediatrician), or other qualified provider.

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
Coverage for clinical preventive services for at-risk children, adolescents, and women of childbearing-age that are not typically delivered in routine: • Well-child care • Preventive preconception, prenatal, or postpartum care. Frequency as defined by the U.S. Preventive Services Task Force or other cited reference.	N/A	All appropriate preventive care. Screening services for high-risk populations are covered, as deemed medically necessary. Services may include, but are not limited to: • Alcohol misuse screening and counseling[1,2] • Cervical cancer screening[2] • Chlamydia screening[2] • Depression screening[2] • Diabetes[2] • Gonorrhea screening[2] • HIV screening[2] • Hypertension[2] • Lead screening[3] • Lipids[2] • Obesity[2] • Sexually transmitted infection (STI) counseling • Syphilis[2] • TB screening[3] • Tobacco use screening and counseling[2]	All others as defined by the health plan.

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
None	0 / 0% (office visits and any covered screening services)	N/A

Actuarial Impact[4]	Cost of Recommended Benefits (PMPM)	Cost Impact
	$ 3.22 (HMO) $ 3.90 (PPO)	The HMO and PPO Benchmark Models exclude coverage for these services. Adding coverage for these services is estimated to **increase** the employer's plan cost by: • $3.22 PMPM / 1.1% of total plan costs (HMO) • $3.90 PMPM / 1.3% of total plan costs (PPO)

Citations

1. American Academy of Pediatrics	American Academy of Pediatrics. Alcohol use and abuse: a pediatric concern. Pediatrics 2001;108:185-9; Kulig JW. Tobacco, alcohol, and other drugs: the role of the pediatrician in prevention, identification, and management of substance abuse. *Pediatrics.* 2005;115:816-21. American Academy of Pediatrics. In: Pickering LK, Backer CJ, Long SS, McMillan JA, eds. *Red Book: 2006 Report of the Committee on Infectious Diseases,* 27th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2006.	Recommended Guidance: Expert Consensus

I. Recommended Minimum Plan Benefits: Preventive Services

K. PREVENTIVE SERVICES (GENERAL) *continued*

Citations		
2. U.S. Preventive Services Task Force	Information on U.S. Preventive Services Task Force (USPSTF) recommendations can be found at: http://www.ahrq.gov/clinic/uspstf/uspstopics.htm • Screening for alcohol misuse. Summary of Recommendations / Supporting Documents. *Guide to Clinical Preventive Services.* Rockville, MD: Agency for Health Care Research and Quality; 2004. *Recommended for adults age 18 and older only.* • Screening for cervical cancer. Summary of Recommendations / Supporting Documents. *Guide to Clinical Preventive Services.* 2nd ed. Rockville, MD: Agency for Health Care Research and Quality; 2003. • Screening for chlamydial infection. Summary of recommendations / Supporting documents. *Guide to Clinical Preventive Services.* Rockville, MD: Agency for Healthcare Research and Quality; 2007. • Screening for depression. Summary of Recommendations / Supporting Documents. *Guide to Clinical Preventive Services.* Rockville, MD: Agency for Healthcare Research and Quality; 2002. *Recommended for adults age 18 and older only.* • Screening for diabetes mellitus, adult type II. Summary of Recommendations / Supporting Documents. *Guide to Clinical Preventive Services.* 2nd ed. Rockville, MD: Agency for Healthcare Research and Quality; 2003. Recommended for high-risk adults age 18 and older. • Screening for gonorrhea: Recommendation Statement. AHRQ Publication No. 05-0579-A, May 2005. Agency for Healthcare Research and Quality, Rockville, MD. Recommended for sexually active women only. • Screening for high blood pressure. Summary of Recommendations / Supporting Documents. *Guide to Clinical Preventive Services.* Rockville, MD: Agency for Healthcare Research and Quality; 2003. *Recommended for adults age 18 and older only.* • Screening for lipid disorders in adults. Summary of Recommendations / Supporting Documents. *Guide to Clinical Preventive Services.* Rockville, MD: Agency for Health Care Research and Quality; 2001. *Recommended for adults age 18 and older only.* • Screening for obesity, adult type II. Summary of Recommendations / Supporting Documents. *Guide to Clinical Preventive Services.* Rockville, MD: Agency for Healthcare Research and Quality; 2003. *Recommended for high-risk adults age 18 and older.* • Screening for Syphilis Infection: Recommendation Statement. July 2004. Agency for Healthcare Research and Quality, Rockville, MD. *Recommended for high-risk women and all pregnant women.* • Tobacco use. Summary of Recommendations / Supporting Documents. Rockville, MD: Agency for Healthcare Research and Quality; 2003.	Evidence-Based Research
3. Centers for Disease Control and Prevention	Centers for Disease Control and Prevention. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health care settings. *MMWR.* 2006;55 (RR14):1-17. Centers for Disease Control and Prevention. *Screening young children for lead poisoning: guidance for state and local public health officials.* Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service, CDC; 1997. Available at: www.cdc.gov/nceh/lead. Accessed June 1, 2007. Centers for Disease Control and Prevention. Targeted tuberculin testing and treatment of latent tuberculosis infection. *MMWR.* 2000;49 (RR-6):1-54.	Expert Opinion
4. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

II. Recommended Minimum Plan Benefits: Physician / Practitioner Services

A. SERVICES DELIVERED BY A PRIMARY CARE PROVIDER

Definition of Benefit	Covered Providers
Medical services delivered in the primary care setting that are diagnostic, therapeutic, rehabilitative, or palliative in nature.[A]	Covered services must be furnished by a primary care physician (family physician, general practitioner, internal medicine physician, pediatrician), a medical professional who operates under a physician (e.g., nurse practitioner, physician's assistant), or a specialist physician or medical professional who is licensed to provide primary care services (e.g., certified nurse midwife, OB-GYN[B]).

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
No limits	N/A	All medically necessary care. Medical necessity supported by the Plan Benefit Model definition. May include services related to physical, mental, oral, or vision problems or conditions.	N/A

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
Per visit copayment	1 / 10%	Copayment and coinsurance payments apply toward maximum.

Actuarial Impact[1]	Cost of Recommended Benefits (PMPM)	Cost Impact
	$ 21.88 (HMO) $ 18.83 (PPO)	The HMO Benchmark Model is consistent with the Plan Benefit Model (cost **neutral**). The PPO Benchmark Model includes a deductible and 20% member coinsurance. Reducing the coinsurance to 10% is estimated to **increase** the employer's plan cost by: • $2.13 PMPM / 0.7% of total plan costs (PPO)

Citations

1. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

[A] Services may be provided in school-based health centers and other non-traditional settings so long as the provider is included in the plan's network.
[B] Obstetricians and gynecologists (OB-GYNs) are considered "primary care providers" only when they are providing preconception, prenatal, and postpartum care. They are considered "medical specialists" when providing all other types of services. Copayment/coinsurance amounts should be adjusted accordingly.

II. Recommended Minimum Plan Benefits: Physician / Practitioner Services

B. SERVICES DELIVERED BY A MENTAL HEALTH / SUBSTANCE ABUSE PROVIDER

Definition of Benefit	Covered Providers
Medical services delivered by or under the direction of a mental health professional or primary care provider that are diagnostic, therapeutic, rehabilitative, or palliative in nature.	Covered services must be furnished by or under the direction of a mental health professional (psychiatrist, clinical psychologist, licensed clinical social worker, licensed professional counselor, psychiatric nurse specialist) or a primary care provider (family physician, pediatrician, nurse practitioner, general practitioner, internal medicine physician).[1]

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
No limits for DSM-IV diagnoses. May require referral from a primary care provider.	N/A	All medically necessary care. Medical necessity supported by the Plan Benefit Model definition.	V-codes as described in the DSM-IV. *Please refer to "Early Intervention Services for Mental Health / Substance Abuse" for additional coverage information.*

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
Per visit copayment	1 / 10%	Copayment and coinsurance amounts apply toward maximum.

	Cost of Recommended Benefits (PMPM)	Cost Impact
Actuarial Impact[2]	$ 4.68 (HMO) $ 5.19 (PPO)	The HMO Benchmark Model includes a copayment of $25 and the PPO Benchmark Model includes 20% member coinsurance. Reducing the required copayment to $20 and the member coinsurance to 10% is estimated to **increase** the employer's plan cost. If either plan has a maximum of 30 mental health visits per year, removing this maximum will increase the employer's plan cost. The estimated total cost increase would be: • $0.74 PMPM / 0.3% of total plan costs (HMO) • $0.91 PMPM / 0.3% of total plan costs (PPO)

Citations

1. U.S. Department of Health and Human Services, Bureau of Health Professionals	U.S. Department of Health and Human Services, Bureau of Health Professionals. *Health Professional Shortage Area Guidelines for Mental Health Care Designation.* Available at: http://bhpr.hrsa.gov/shortage/hpsaguidement.htm. Accessed on January 12, 2007.	Recommended Guidance
2. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

II. Recommended Minimum Plan Benefits: Physician / Practitioner Services

C. SERVICES DELIVERED BY A SPECIALTY PHYSICIAN OR SURGEON

Definition of Benefit		Covered Providers	
Medical services delivered by a specialty physician or surgeon that are diagnostic, therapeutic, rehabilitative, or palliative in nature.		Covered services must be furnished by or under the direction of a physician trained in a specialty area such as: allergy and immunology, anesthesiology, dermatology, emergency medicine, medical genetics, neurological surgery, neurology/child neurology, nuclear medicine, obstetrics/gynecology[A], ophthalmology, orthopedic surgery, otolaryngology, pathology, physical medicine and rehabilitation, plastic surgery, psychiatry, radiology, surgery, thoracic surgery, urology, or other recognized medical specialty.	
Recommended Benefit Coverage Limits	**Recommended Exceptions**	**Inclusions**	**Exclusions**
No limits. May require a referral from a primary care provider.	Recommend reducing member coinsurance to 10% for treatment of chronic conditions with referral from a primary care provider.	All medically necessary care. Medical necessity supported by the Plan Benefit Model definition. May include services related to physical, mental, oral, or vision problems or conditions	N/A
Recommended Cost-Sharing	**Copayment / Coinsurance Level (0-5 / 0-25%)**	**Out-of-Pocket Maximum**	
Per visit copayment	1 / 10% if referred by a PCP for treatment of a chronic condition; 2 / 15% in all other circumstances	Copayment and coinsurance amounts apply toward maximum.	
Actuarial Impact[1]	**Cost of Recommended Benefits (PMPM)**	**Cost Impact**	
	$ 61.67 (HMO) $ 62.33 (PPO)	The HMO Benchmark Model is consistent with the Plan Benefit Model (cost **neutral**). The PPO Benchmark Model includes a deductible and 20% member coinsurance. Reducing member coinsurance to 15% is estimated to **increase** the employer's plan cost by: • $2.47 PMPM / 0.8% of total plan costs (PPO)	
Citations			
1. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. Actuarial *Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model*. Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.		Actuarial Analysis

[A] Obstetricians and gynecologists (OB-GYNs) are considered "primary care providers" only when they are providing preconception, prenatal, and postpartum care. They are considered "medical specialists" when providing all other types of services.

II. Recommended Minimum Plan Benefits: Physician/ Practitioner Services

D. E-VISITS AND TELEPHONIC SERVICES

Definition of Benefit	Covered Providers
Two-way electronic communication (via email or telephone) between a beneficiary and a provider that takes the place of an office visit for a non-urgent problem or question specific to the beneficiary.[1] Must include clinical decision making, a review of symptoms, and the provision of clinical advice. Communication may be initiated by either the beneficiary or the provider. [1,2]	Covered services must be furnished by a physician, a medical professional who operates under a physician (e.g., nurse practitioner, physician's assistant), or a medical professional who is licensed to provide primary care services (e.g., certified nurse midwife).

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
Appropriate uses for e-mail communication include: prescription refills; test results; routine follow-up inquiries; reporting of home health monitoring/self-management of chronic disease [1,2]; and information on how to take medications, apply dressings, and follow pre-and post-operative instructions.[2] Appropriate uses for telephonic communication include: calls for provider management of a new problem, including counseling, medical management, and coordination of care not resulting in an office visit within 24 hours; calls for provider management about an existing problem for which the beneficiary was not seen in a face-to-face encounter in the previous 7 days; and calls related to care plan oversight for beneficiaries with special needs in residential settings and those with a chronic disease who require provider supervision over a period of time during a calendar month.[3] No other limits.		All medically necessary care. Medical necessity supported by the Plan Benefit Model definition. May include services related to physical, mental, oral, or vision problems or conditions.	• Scheduling. • Appointment reminders and courtesy calls. • Communication that results in an office visit within the subsequent 24 hours. • All others as defined by the health plan.

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
Determined by plan administrator based on negotiated rates.	Determined by plan administrator based on negotiated rates.	Copayment and coinsurance payments apply toward maximum. Employers are encouraged to partner with health plan administrators to test/pilot this benefit in a target market.

Actuarial Impact[4]	Cost of Recommended Benefits (PMPM)	Cost Impact
	Data not available. Employers are encouraged to partner with their health plan administrator(s) to test/ pilot this benefit in a target market.	Data not available

Citations

1. California Healthcare Foundation	E-Encounters. Health Reports. Oakland, CA: California Healthcare Foundation; 2001.	Industry Standard
2. American Medical Association	American Medical Association. *Young Physicians Section. Guidelines for Physician-Patient Electronic Communications. Updated 2004.* Available at: http://www.ama-assn.org/ama/pub/category/2386.html. Accessed on June 12, 2007.	Recommended Guidance
3. American Academy of Pediatrics	American Academy of Pediatrics. Payment for telephone care. Policy statement. *Pediatrics.* 2006; 118(4): 1768-1773.	Recommended Guidance: Expert Opinion
4. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

III. Recommended Minimum Plan Benefits: Emergency Care, Hospitalization, and Other Facility-Based Care

A. EMERGENCY ROOM SERVICES AND URGENT CARE SERVICES

Definition of Benefit	Covered Providers
Emergency Room Services: Services provided to a beneficiary experiencing a sudden or unexpected condition that may endanger his/her life or could result in a serious injury or disability and thus requires immediate medical attention. Declaration of an emergency service is based on the prudent lay person standard. **Urgent Care Services:** Ambulatory care services delivered to a beneficiary who is experiencing a medical condition that is serious or acute and requires medical attention within 24 hours, yet does not pose an immediate threat to life or health.	Covered services must be furnished by or under the direction of a physician in a hospital emergency department or an urgent care center.[1]

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
No limits	N/A	All medically necessary care. Medical necessity supported by the Plan Benefit Model definition. May include services related to physical, mental, oral, or vision problems or conditions.	• Elective care or non-emergent care and follow-up care recommended by non-plan providers that has not been approved by the plan or provided by plan providers; • Emergency care provided outside the service area if the need for care could have been foreseen before leaving the service area; • Medical and hospital costs resulting from a normal full-term delivery of a baby outside the service area.[1]

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
Per visit copayment	3 / 20% (true emergency); 5 / 25%+ (non-emergent); 2 / 10% (urgent care)	Copayment and coinsurance amounts apply toward maximum.

	Cost ofRecommended Benefits (PMPM)	Cost Impact
Actuarial Impact[2]	$ 16.67 (HMO) $ 17.76 (PPO)	The PPO/HMO Benchmark Model includes 20% to 25% member coinsurance/ $100 copayment for ER services. These ranges are consistent with the Plan Benefit Model (cost **neutral**). Reducing the required copayment to $20 and the member coinsurance to 10% for urgent care services is estimated to **increase** the employer's plan cost by: • $1.56 PMPM / 0.5% of total plan costs (HMO) • $1.82 PMPM / 0.6% of total plan costs (PPO)

Citations

1. Federal Employee Health Benefit Plan	U.S. Office of Personnel Management, Federal Employees Health Benefits Program. *Sample plan characteristics (Aetna: Individual practice plan with a consumer driven health plan option and a high deductible health plan option).* Available at: https://www.opm.gov/insure/07/brochures/pdf/73-828.pdf. Accessed on January 17, 2007.	Federally Vetted
2. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

III. Recommended Minimum Plan Benefits: Emergency Care, Hospitalization, and Other Facility-Based Care			
B. INPATIENT SUBSTANCE ABUSE DETOXIFICATION			
Definition of Benefit		**Covered Providers**	
Medical services designed to facilitate the medical process of detoxification from alcohol or any other drug.[1]		Covered services must be furnished by or under the direction of a psychiatrist, addictionist, or primary care physician (family physician, general practitioner, internal medicine physician, pediatrician) in an accredited facility.	
Recommended Benefit Coverage Limits	**Recommended Exceptions**	**Inclusions**	**Exclusions**
No limits. Requires pre-certification.	N/A	All medically necessary care. Medical necessity supported by the Plan Benefit Model definition.	All others as defined by the health plan.
Recommended Cost-Sharing	**Copayment /Coinsurance Level (0-5 / 0-25%)**	**Out-of-Pocket Maximum**	
Per episode copayment. One-time coinsurance based on negotiated occupancy rate.	4 / 25%	Copayment and coinsurance amounts apply toward maximum.	
Actuarial Impact[2]	**Cost ofRecommended Benefits (PMPM)**	**Cost Impact**	
	$ 0.84 (HMO) $ 1.05 (PPO)	The HMO Benchmark Models is consistent with the Plan Benefit Model (cost **neutral**). The PPO Benchmark Model includes a deductible. Eliminating the deductible will result in a negligible increase in benefit costs (cost **neutral**).	
Citations			
1. Federal Employee Health Benefit Plan	U.S. Office of Personnel Management, Federal Employees Health Benefits Program. *Sample plan characteristics (Aetna: Individual practice plan with a consumer driven health plan option and a high deductible health plan option).* Available at: https://www.opm.gov/insure/07/brochures/pdf/73-828.pdf. Accessed on January 17, 2007.		Federally Vetted
2. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.		Actuarial Analysis

III. Recommended Minimum Plan Benefits: Emergency Care, Hospitalization, and Other Facility-Based Care

C. INPATIENT HOSPITAL SERVICE: GENERAL INPATIENT/RESIDENTIAL CARE (INCLUDING MENTAL HEALTH/SUBSTANCE ABUSE)

Definition of Benefit	Covered Providers
Medical services that are diagnostic, therapeutic, rehabilitative, or palliative in nature and are furnished in a facility such as a hospital or appropriately accredited residential treatment facility.	Covered services must be furnished by or under the direction of a physician, dentist, mental health professional (clinical psychologist, licensed clinical social worker, licensed professional counselor, psychiatric nurse practitioner, psychiatrist), or other qualified provider.[1]

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
Admissions may require pre-certification. Periodic recertification of the beneficiary's continued need for care may also be required. Mental health admissions require a DSM-IV diagnosis. No other limits.	N/A	All medically necessary care. Medical necessity supported by the Plan Benefit Model definition. May include services related to physical, mental, oral, or vision problems or conditions. Coverage also includes[2]: • Ward, semi-private, or intensive care accommodations. • General nursing care. • Meals and special diets. • Operating, recovery, and other treatment rooms. • Prescribed drugs and medicines. • Diagnostic laboratory tests and X-rays. • Administration of blood and blood products. • Blood products, derivatives and components, artificial blood products and biological serum. • Dressings, splints, casts, and sterile tray services. • Medical supplies and equipment, including oxygen. • Anesthetics, including nurse anesthetist services. • Take-home items. • Medical supplies, appliances, medical equipment, and any covered items billed by a hospital for use at home.	All others as defined by the health plan.

Recommended Cost-Sharing	Copayment /Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
Per episode copayment. One-time coinsurance based on negotiated occupancy rate.	4 / 25%	Copayment and coinsurance amounts apply toward maximum.

	Cost ofRecommended Benefits (PMPM)	Cost Impact
Actuarial Impact[3]	$ 61.24 (HMO) $ 75.74 (PPO)	The HMO Benchmark Model is consistent with the Plan Benefit Model (cost **neutral**). The PPO Benchmark Model includes a deductible. Eliminating the deductible is estimated to **increase** the employer's plan cost by: • $0.30 PMPM / 0.1% of total plan costs (PPO)

III. Recommended Minimum Plan Benefits: Emergency Care, Hospitalization, and Other Facility-Based Care		
C. INPATIENT HOSPITAL SERVICE: GENERAL INPATIENT/RESIDENTIAL CARE (INCLUDING MENTAL HEALTH/SUBSTANCE ABUSE) *continued*		
Citations		
1. U.S. Department of Health and Human Services, Bureau of Health Professionals	U.S. Department of Health and Human Services, Bureau of Health Professionals. *Health Professional Shortage Area Guidelines for Mental Health Care Designation*. Available at: http://bhpr.hrsa.gov/shortage/hpsaguidement.htm. Accessed on January 12, 2007.	Recommended Guidance
2. Federal Employee Health Benefit Plan	U.S. Office of Personnel Management, Federal Employees Health Benefits Program. *Sample plan characteristics (Aetna: Individual practice plan with a consumer driven health plan option and a high deductible health plan option)*. Available at: https://www.opm.gov/insure/07/brochures/pdf/73-828.pdf. Accessed on January 17, 2007.	Federally Vetted
3. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model*. Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

III. Recommended Minimum Plan Benefits: Emergency Care, Hospitalization, and Other Facility-Based Care

D. INPATIENT HOSPITAL SERVICE OR BIRTH CENTER FACILITIES: LABOR / DELIVERY

Definition of Benefit	Covered Providers
Medical services specifically designed to facilitate labor and delivery. These services may be diagnostic, therapeutic, or rehabilitative in nature and are typically furnished in a hospital or birth center.	Covered services must be furnished by or under the direction of a primary care physician (family physician, general practitioner, internal medicine physician, OB-GYN[A]), nurse practitioner, or a medical professional who is licensed to provide pregnancy-related primary care services (e.g., certified nurse midwife).

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
2+ days: vaginal delivery (pending risk level).[1, 2] 4+ days: cesarean delivery, excluding the day of delivery (pending risk level).[1, 2]	Include provisions for women with high-risk pregnancies.	All medically necessary care. Medical necessity supported by the Plan Benefit Model definition. Coverage also includes[3]: • Ward, semi-private, or intensive care accommodations. • General nursing care. • Lactation consultations. • Meals and special diets. • Operating, recovery, maternity, and other treatment rooms. • Prescribed drugs and medicines. • Diagnostic laboratory tests. • Administration of blood and blood products. • Blood products, derivatives and components, artificial blood products, and biological serum. Blood products include any product created from a component of blood such as, but not limited to, plasma, packed red blood cells, platelets, albumin, factor VIII, immunoglobulin, and prolastin • Medical supplies and equipment, including oxygen. • Anesthetics, including nurse anesthetist services. • Take-home items. • Medical supplies, appliances, medical equipment, and any covered items billed by a hospital for use at home.	All others as defined by the health plan.

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
Per episode copayment. One-time coinsurance based on negotiated occupancy rate.	4 / 25%	Copayment and coinsurance amounts apply toward maximum.

	Cost ofRecommended Benefits (PMPM)	Cost Impact
Actuarial Impact[4]	$ 11.05 (HMO) $ 13.59 (PPO)	The HMO Benchmark Model is consistent with the Plan Benefit Model (cost **neutral**). The PPO Benchmark Model includes a deductible. Eliminating the deductible will result in a negligible increase in benefit costs (cost **neutral**).

III. Recommended Minimum Plan Benefits: Emergency Care, Hospitalization, and Other Facility-Based Care		
D. INPATIENT HOSPITAL SERVICE OR BIRTH CENTER FACILITIES: LABOR / DELIVERY *continued*		
Citations		
1. American Academy of Pediatrics & American College of Obstetricians and Gynecologists	American Academy of Pediatrics & American College of Obstetricians and Gynecologists. *Guidelines for Prenatal Care*, 3rd ed. Elk Grove Village, IL; American Academy of Pediatrics & American College of Obstetricians and Gynecologists; 1992.	Recommended Guidance: Expert Opinion
2. American Academy of Pediatrics	Committee on Fetus and Newborn. Policy Statement: Hospital stay for healthy newborns. *Pediatrics.* 2004; 113(5): 1434-1436. Available at: http://pediatrics.aappublications.org/cgi/content/full/113/5/1434. Accessed on September 14, 2006.	Recommended Guidance: Expert Opinion
3. Federal Employee Health Benefit Plan	U.S. Office of Personnel Management, Federal Employees Health Benefits Program. *Sample plan characteristics (Aetna: Individual practice plan with a consumer driven health plan option and a high deductible health plan option).* Available at: https://www.opm.gov/insure/07/brochures/pdf/73-828.pdf. Accessed on January 17, 2007.	Federally Vetted
4. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

[A] Obstetricians and gynecologists are considered "primary care providers" only when they are providing preconception, prenatal, and postpartum care. They are considered "medical specialists" when providing all other types of services.

III. Recommended Minimum Plan Benefits: Emergency Care, Hospitalization, and Other Facility-Based Care

E. AMBULATORY SURGICAL CENTERS OR OUTPATIENT HOSPITAL SERVICES

Definition of Benefit	Covered Providers
Medical services that are preventive, diagnostic, therapeutic, or rehabilitative in nature and are delivered in an ambulatory surgical centers or an outpatient hospital facility.	Covered services must be furnished by or under the direction of a physician or other qualified provider.

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
Some services may require pre-certification. No other limits.	N/A	All medically necessary care. Medical necessity supported by the Plan Benefit Model definition. May include services related to physical, oral, or vision problems or conditions.	All others as defined by the plan.

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
Per visit copayment. Per visit coinsurance based on negotiated rate.	3 / 20%	Copayment and coinsurance amounts apply toward maximum.

Actuarial Impact[1]	Cost ofRecommended Benefits (PMPM)	Cost Impact
	$ 69.11 (HMO) $ 65.09 (PPO)	The HMO and PPO Benchmark Models are consistent with the Plan Benefit Model (cost **neutral**).

Citations		
1. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

III. Recommended Minimum Plan Benefits: Emergency Care, Hospitalization, and Other Facility-Based Care

F. MENTAL HEALTH / SUBSTANCE ABUSE PARTIAL-DAY HOSPITAL (DAY TREATMENT) OR INTENSIVE OUTPATIENT SERVICES

Definition of Benefit	Covered Providers
Mental health and substance abuse services that are therapeutic, rehabilitative, or palliative in nature.[1]	Covered services must be furnished by or under the direction of a physician, mental health professional (clinical psychologist, licensed clinical social worker, licensed professional counselor, psychiatric nurse practitioner, psychiatrist), or other qualified provider.[1]

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
Mental health admissions require a DSM-IV diagnosis. Requires pre-certification. Partial-day hospital programs must include a minimum of 3 hours of clinical services per day, 5 days per week.[3] No other limits.	Include additional coverage for halfway houses (in lieu of inpatient care), when appropriate.	All medically necessary care. Medical necessity supported by the Plan Benefit Model definition. Treatment includes structured group activities for multiple hours during a day and assertive community treatment comprised of intensive therapy, skill training, and other community support services for beneficiaries difficult to engage in treatment.	All others as defined by the health plan.

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
Per episode copayment. One time coinsurance based on negotiated rate.	3 / 20%	Copayment and coinsurance amounts apply toward maximum.

	Cost ofRecommended Benefits (PMPM)	Cost Impact
Actuarial Impact[4]	$ 0.19 (HMO) $ 0.21 (PPO)	The HMO Benchmark Model is consistent with the Plan Benefit Model (cost **neutral**). The PPO Benchmark Model includes a deductible. Eliminating the deductible will result in a negligible increase in benefit costs (cost **neutral**). This assumes there are no changes in managed care practices.

Citations

1. Kaiser Family Foundation	The Henry J. Kaiser Foundation. *Medicaid Benefits: Online Database, Benefits by Service, Definition / Notes (October, 2004).* Available at: http://www.kff.org/medicaid/benefits/sv_foot.jsp#14. Accessed on January 13, 2007.	Industry Standard
2. U.S. Department of Health and Human Services, Bureau of Health Professionals	U.S. Department of Health and Human Services, Bureau of Health Professionals. *Health Professional Shortage Area Guidelines for Mental Health Care Designation.* Available at: http://bhpr.hrsa.gov/shortage/hpsaguidement.htm. Accessed on January 12, 2007.	Recommended Guidance
3. U.S. Armed Services Health Care Services (TriCare)	TriCare. *TriCare: Behavioral Healthcare Services.* Available at: http://www.tricare.mil/mybenefit/Download/Forms/BHC_Br_Lo_Res.pdf. Accessed on August 9, 2007.	Federally Vetted
4. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

IV. Recommended Minimum Plan Benefits: Therapeutic Services / Ancillary Services

A. PRESCRIPTION DRUGS

Definition of Benefit		Covered Providers	
Medications used to prevent, treat, or manage a medical condition.		Medications may only be dispensed by a state-licensed pharmacist, physician, or provider under the direction of a physician.	
Recommended Benefit Coverage Limits	**Recommended Exceptions**	**Inclusions**	**Exclusions**
A diagnosis is required for all prescriptions. Medication is covered when, and only when, it: 1) requires a prescription; and 2) is used to prevent, treat, or manage a specific illness or condition. No other limits.	Consider waiving/reducing the copayment/coinsurance for children with special health care needs; consider offering experimental drugs for children with terminal illnesses.	All medically necessary medications. Medical necessity supported by the Plan Benefit Model definition.	All others as defined by the health plan.
Recommended Cost-Sharing	**Copayment / Coinsurance Level (0-5 / 0-25%)**	**Out-of-Pocket Maximum**	
Copayment and coinsurance amounts defined by brand, generic, and non-formulary drug categories.	Range: 0-4 / 0%-25% (based on formulary)	Copayment and coinsurance amounts apply toward maximum.	
Actuarial Impact[1]	**Cost ofRecommended Benefits (PMPM)**	**Cost Impact**	
	$ 30.51 (HMO) $ 37.06 (PPO)	The HMO and PPO Benchmark Models are consistent with the Plan Benefit Model (cost **neutral**).	
Citations			
1. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.		Actuarial Analysis

IV. Recommended Minimum Plan Benefits: Therapeutic Services / Ancillary Services

B. DENTAL SERVICES

Definition of Benefit	Covered Providers
Medical services specifically designed to address oral health. These services may be diagnostic, therapeutic, or rehabilitative in nature.	Covered services must be furnished by or under the direction of a licensed dentist or licensed dental hygienist. Licensed dental hygienists must be overseen by a dentist or primary care provider. Dental services may be provided in the outpatient setting, in emergency rooms, or in the inpatient setting, according to need.

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
Annual limit: $5,000 per person.	Include provisions for children with complex case-management needs (e.g., flex benefits).	All medically necessary care. Medical necessity supported by the Plan Benefit Model definition. Coverage also includes: • Amalgam and resin-based composite restorations ("fillings").[1, 2] • Extractions (oral surgery) such as simple, surgical, soft tissue and bony impacted teeth.[1] • General anesthesia, intravenous sedation,[1] oral sedation, and nitrous oxide. • Occlusal guards (for bruxism only) —limited to one every 3 years, from the last date of service.[1] • Crowns (prefabricated stainless steel crowns and resin).[1, 2] • Osseous surgery ("periodontics") —one per quadrant every 3 years, from the last date of service.[1] • Implants.[4] • Prosthetics.[4] • Endodontic procedures (e.g., root canal treatment, pulpotomies, pulpectomies).[3] • Orthodontics covered only when treatment meets medical necessity criteria.[4]	• Orthodontics, when not medically necessary.[1] • Dental treatment for cosmetic purposes.[1]

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
Per visit copayment. Per visit coinsurance based on negotiated rate.	2 / 15%	Copayment and coinsurance amounts apply toward maximum.

	Cost ofRecommended Benefits (PMPM)	Cost Impact
Actuarial Impact[5]	$ 15.36 (HMO) $ 17.01 (PPO)	The HMO/PPO Benchmark Model includes member coinsurance for restorative and orthodontic procedures (20% and 50% respectively) and the PPO Benchmark Model includes a $2,500 annual maximum benefit. Decreasing the member coinsurance to the recommended 15% and setting the annual maximum benefit at $5,000 for both plans will **increase** the employer's plan cost by: • $2.81 PMPM / 1.0% of total plan costs (HMO) • $3.11 PMPM / 1.0% of total plan costs (PPO)

IV. Recommended Minimum Plan Benefits: Therapeutic Services / Ancillary Services		
B. DENTAL SERVICES *continued*		
Citations		
1. Federal Employee Health Benefit Plan	U.S. Office of Personnel Management, Federal Employees Health Benefits Program. *Sample plan characteristics (Aetna: Individual practice plan with a consumer driven health plan option and a high deductible health plan option).* Available at: https://www.opm.gov/insure/07/brochures/pdf/73-828.pdf. Accessed on January 17, 2007.	Federally Vetted
2. American Academy of Pediatric Dentistry	American Academy of Pediatric Dentistry. *Guidelines on Pediatric Restorative Dentistry. Clinical Guidelines Reference Manual* 2005-2006; Revised 2004.	Recommended Guidance: Expert Opinion
3. American Academy of Pediatric Dentistry	American Academy of Pediatric Dentistry. Guidelines on pulp therapy for primary and young permanent teeth. Clinical Guidelines Reference Manual 2005-2006. American Academy of Pediatric Dentistry; 2004.	Recommended Guidance: Expert Opinion
4. Maternal and Family Health Benefits Advisory Board	Maternal and Family Health Benefits Advisory Board. Washington, DC: National Business Group on Health; August 2007.	Recommended Guidance: Expert Opinion
5. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model*. Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

IV. Recommended Minimum Plan Benefits: Therapeutic Services / Ancillary Services

C. VISION SERVICES

Definition of Benefit	Covered Providers
Services to assess and address vision problems including refractive exams for eyeglasses and contacts, exams and assessments for other low vision aids, and vision therapy.	Covered services must be furnished by an ophthalmologist or optometrist.

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
Refractive exams (limit 1 per calendar year)[1]; treatment of eye diseases and injury; replacement lenses and frames or contact lenses every year or each time a prescription changes.	Include provisions for children with complex case-management needs (e.g., flex benefits).	• Refractive eye exams.[1] • Corrective eyeglasses and frames.[2] • Contact lenses.[2] • Fitting of contact lenses.[2] • Eye exercises.[1,2]	All others as defined by the health plan.

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
Per visit copayment or per visit coinsurance based on negotiated rate. No copayment/ coinsurance on glasses or contacts purchase. Monetary limit on eyeglasses, frames, and contacts: $200 per calendar year.[3]	2 / 15%	Copayment and coinsurance amounts apply toward maximum.

Actuarial Impact[4]	Cost ofRecommended Benefits (PMPM)	Cost Impact
	$ 3.93 (HMO) $ 4.77 (PPO)	The HMO Benchmark Model is consistent with the Plan Benefit Model (cost **neutral**). The PPO Benchmark Model includes a deductible and 20% member coinsurance. Eliminating the deductible and decreasing the member coinsurance to 15% will **increase** the employer's cost by: • $1.73 PMPM / 0.6% of total plan costs (PPO)

Citations

1. American Academy of Ophthalmology	Committee on Practice and Ambulatory Medicine, Section on Ophthalmology. American Association of Certified Orthoptists; American Association for Pediatric Ophthalmology and Strabismus; American Academy of Ophthalmology. Eye examination in infants, children, and young adults by pediatricians. *Pediatrics*. 2003 Apr;111(4 Pt 1):902-7.	Recommended Guidance: Expert Opinion
2. Federal Employee Health Benefit Plan	U.S. Office of Personnel Management, Federal Employees Health Benefits Program. *Sample plan characteristics (Aetna: Individual practice plan with a consumer driven health plan option and a high deductible health plan option).* Available at: https://www.opm.gov/insure/07/brochures/pdf/73-828.pdf. Accessed on January 17, 2007.	Federally Vetted
3. Eye Med	Average cost of top 10 child-appropriate frames and polycarbonate lenses from Lens Crafters, Pearle Vision, Target, and Sears Optical.	Industry Standard
4. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model*. Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

IV. Recommended Minimum Plan Benefits: Therapeutic Services / Ancillary Services

D. AUDIOLOGY SERVICES

Definition of Benefit	Covered Providers
Medical services specifically designed to address hearing loss. These services may be diagnostic, therapeutic, or rehabilitative in nature.	Covered services must be furnished by or under the direction of a state-licensed/board-certified audiologist or speech-language pathologist.[1]

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
No limit. Requires pre-certification and/or referral.	Include provisions for children with complex case-management needs (e.g., flex benefits).	All medically necessary assessment and treatment including[1]: • Audiological, tinnitus, vestibular and balance assessment; central auditory, cochlear implant, assistive listening device (ALD), auditory rehabilitation, and hearing aid assessment and fitting. • Treatment of audiologic (aural) rehabilitation/habilitation, vestibular and balance, auditory processing, and cerumen management problems.	All others as defined by the health plan. *Please refer to the "Durable Medical Equipment (DME), Supplies & Medical Foods" benefit for additional information on equipment /device coverage.*

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
Per visit copayment. Per visit coinsurance based on negotiated rate.	2 / 15%	Copayment and coinsurance amounts apply toward maximum.

Actuarial Impact[2]	Cost ofRecommended Benefits (PMPM)	Cost Impact
	$ 1.24 (HMO) $ 1.75 (PPO)	The HMO/PPO Benchmark Model is consistent with the Plan Benefit Model (cost **neutral**).

Citations		
1. American Speech-Language-Hearing Association	American Speech-Language-Hearing Association. *Model Health Care Benefits, Ideal Health Plan Coverages for Audiology and Speech-Language Pathology Services.* Available at: http://www.asha.org/public/add-benefits/model-benefits.htm#speech and http://www.asha.org/public/add-benefits/providers.htm. Accessed on July 12, 2007.	Recommended Guidance
2. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

IV. Recommended Minimum Plan Benefits: Therapeutic Services / Ancillary Services

E. NUTRITIONAL SERVICES

Definition of Benefit	Covered Providers
Medical services that are diagnostic, therapeutic, or rehabilitative in nature and are specifically designed to address diet and nutrition. These services should include a comprehensive process for defining an individual's nutrition and hydration status using medical, nutrition, and medication intake histories, physical examination, anthropomorphic measures, and laboratory data. Nutritional services may also involve interventions and counseling to promote appropriate nutrition and fluid intake. Nutrition therapy, as a component of medical treatment, includes enteral and parenteral nutrition care.[1]	Covered services must be furnished by or under the direction of a physician, nurse practitioner, or other licensed provider (e.g., registered dietitian) working under the direction a physician.

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
Limited to 25 visits per calendar year. Requires pre-certification and/or referral.[2]	Include provisions for children with complex case-management needs (e.g., flex benefits).	All medically necessary care. Medical necessity supported by the Plan Benefit Model definition.	All others as defined by the health plan.

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
Per visit copayment. Per visit coinsurance based on negotiated rate.	2 / 15%	Copayment and coinsurance amounts apply toward maximum.

Actuarial Impact[3]	Cost ofRecommended Benefits (PMPM)	Cost Impact
	$ 1.03 (HMO) $ 1.22 (PPO)	The HMO and PPO Benchmark Models exclude coverage for these services. Adding coverage for these services is estimated to **increase** the employer's plan cost by: • $1.03 PMPM / 0.4% of total plan costs (HMO) • $1.22 PMPM/ 0.4% of total plan costs (PPO)

Citations

1. American Dietetic Association	Definition provided by the American Dietetic Association. Adapted from: Joint Commission on Accreditation of Healthcare Organizations. *2007 Standards for Ambulatory Care.* 2007:361-362.	Recommended Guidance: Professional Guideline
2. Maternal and Family Health Benefits Advisory Board	Maternal and Family Health Benefits Advisory Board. Washington, DC: National Business Group on Health; August 2007.	Recommended Guidance: Expert Opinion
3. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

IV. Recommended Minimum Plan Benefits: Therapeutic Services / Ancillary Services

F. OCCUPATIONAL, PHYSICAL, AND SPEECH THERAPY SERVICES

Definition of Benefit	Covered Providers
Occupational Therapy Services: Medical services designed to: • Assist people regain performance skills lost through injury or illness[1] • Develop skills inhibited by a problem present at birth or a developmental delay.[2] Individualized programs are designed to improve quality of life by recovering or developing competence, maximizing independence, and preventing injury or disability, so that a person can cope with school, work, home, and social life.[1] **Physical Therapy Services:** Medical services designed to relieve symptoms, improve function, and prevent further disability for individuals disabled by chronic or acute disease or injury. Physical therapy services may also be used to help people develop skills inhibited by a problem present at birth or a developmental delay.[2] Treatment may include various forms of heat and cold, electrical stimulation, therapeutic exercises, ambulation training, and training in functional activities.[3] **Services for Speech, Hearing and Language Disorders:** Medical services for beneficiaries with speech, hearing, and language disorders. Services may also be used to help people develop skills inhibited by a problem present at birth or a developmental delay.[1] Services may be diagnostic, rehabilitative, or corrective in nature.[4]	Covered services must be furnished by or under the supervision of a primary care provider (family physician, general practitioner, internal medicine physician, nurse practitioner, pediatrician), licensed occupational therapist, physical therapist, speech pathologist, or speech therapist.

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
Combined total of 75 visits per calendar year. Requires pre-certification and/or referral.[5]	Include provisions for children with complex case-management needs (e.g., flex benefits). Consider extending benefit for multiple providers.	All medically necessary care. Medical necessity supported by the Plan Benefit Model definition.	• Recreational or educational therapy.[5] • Exercise programs/ hippotherapy (exercise on horseback).[5]

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
Per visit copayment or per visit coinsurance based on negotiated rate.	2 / 15%	Copayment and coinsurance amounts apply toward maximum.

	Cost ofRecommended Benefits (PMPM)	Cost Impact
Actuarial Impact[6]	$ 0.92 (HMO) $ 1.35 (PPO)	The HMO Benchmark Model is consistent with the Plan Benefit Model (cost **neutral**). The PPO Benchmark Model includes a deductible and 20% member coinsurance. Eliminating the deductible, decreasing the member coinsurance to 15%, and increasing the annual visit limit from 60 visits to 75 visits will **increase** the employer's cost by: • $0.23 PMPM / 0.1% of total plan costs (PPO)

IV. Recommended Minimum Plan Benefits: Therapeutic Services / Ancillary Services		
F. OCCUPATIONAL, PHYSICAL, AND SPEECH THERAPY SERVICES *continued*		
Citations		
1. Aetna Medical Definition	Aetna. *Clinical Policy Bulletin.* Available at: http://www.aetna.com/cpb/medical/data/200_299/0250.html. Accessed on April 3, 2006.	Industry Standard
2. Maternal and Family Health Benefits Advisory Board	Maternal and Family Health Benefits Advisory Board. Washington, DC: National Business Group on Health; August 2007.	Recommended Guidance: Expert Opinion
3. Aetna Medical Definition	Aetna. *Clinical Policy Bulletin.* Available at: http://www.aetna.com/cpb/medical/data/300_399/0325.html. Accessed on April 1, 2007.	Industry Standard
4. Kaiser Family Foundation	The Henry J. Kaiser Foundation. *Medicaid Benefits: Online Database, Benefits by Service, Definition / Notes (October, 2004).* Available at: http://www.kff.org/medicaid/benefits/sv_foot.jsp#14. Accessed on January 11, 2007.	Industry Standard
5. Federal Employees Health Benefits Program	Blue Cross Blue Shield. *Federal Employee Program Service Benefit Plan., 2006 Benefits. Section 5(a): Medical Services and Supplies Provided by Physicians and Other Health Care Professionals.* Available at: http://www.fepblue.org/benefits/benefits06/benftsbpbsection5a-06.html#top. Accessed on September 16, 2006.	Federally Vetted
6. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

IV. Recommended Minimum Plan Benefits: Therapeutic Services / Ancillary Services

G. INFERTILITY SERVICES

Definition of Benefit	Covered Providers
Medical services designed to diagnose and address infertility.	Covered services must be furnished by or under the direction of a primary care provider (family physician, general practitioner, internal medicine physician, nurse practitioner) or qualified physician specialist (e.g., OB-GYN, fertility specialist).

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
Medications are subject to formulary requirements.	N/A	Covered services include[1]: • Medically appropriate laboratory examinations and tests; counseling services and patient education. • Examination and treatment. • Testing for diagnosis and surgical treatment of the underlying cause of infertility. • Fertility drugs (oral and injectable). • Artificial insemination (intravaginal insemination [IVI], intracervical insemination [ICI], intrauterine insemination [IUI]).	Excluded services[1]: • Assisted reproductive technology (ART) procedures, such as: in vitro fertilization, embryo transfer including, but not limited to, gamete GIFT and zygote ZIFT; and ovulation induction. • Services and supplies related to the aforementioned services. • Reversal of voluntary, surgically-induced sterility. • Treatment for infertility when the cause of the infertility was a previous sterilization with or without surgical reversal. • Infertility treatment of any type when the FSH level is 19 mIU/ml or greater on day 3 of a menstrual cycle. • Sperm processing. • Purchasing, freezing, and storing of donor sperm or donor eggs. • All others as defined by the health plan.

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
Per visit/unit copayment. Per visit/unit coinsurance based on negotiated rate. Cost-sharing for artificial insemination determined per cycle.	5 / 25%+	Does not apply.

Actuarial Impact[2]	Cost ofRecommended Benefits (PMPM)	Cost Impact
	$ 5.82 (HMO) $ 5.94 (PPO)	The PPO/HMO Benchmark model is consistent with the Plan Benefit Model (cost **neutral**).

Citations		
1. Federal Employee Health Benefit Plan	U.S. Office of Personnel Management, Federal Employees Health Benefits Program. *Sample plan characteristics (Aetna: Individual practice plan with a consumer driven health plan option and a high deductible health plan option).* Available at: https://www.opm.gov/insure/07/brochures/pdf/73-828.pdf. Accessed on January 17, 2007.	Federally Vetted
2. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

IV. Recommended Minimum Plan Benefits: Therapeutic Services / Ancillary Services

H. HOME HEALTH SERVICES

Definition of Benefit	Covered Providers
Medical services that are provided to a beneficiary at his/her place of residence upon physician order as part of a written plan of care.	Covered providers include registered nurses and credentialed home health aides employed by a home health agency. In addition, plans may choose to have home health agencies provide, when medically necessary and ordered by the beneficiary's physician: nutritional services, physical therapy, and occupational therapy services; and speech pathology/ audiology services. Alternatively, the plan may allow a home health agency to arrange for therapy services to be provided by professionals at a medical rehabilitation facility.[1]

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
No limit. Requires pre-certification and/or referral.	N/A	All medically necessary care. Medical necessity supported by the Plan Benefit Model definition. Coverage also includes[1,2]: • Respite care including respite inpatient stays when there are no available qualified home health professionals within the geographic area. • Hospice and palliative care services. • Early intervention services as prescribed by a physician. • Medical daycare. • Oxygen therapy. • Intravenous therapy. • Medications. • Nutritional services.[3]	The following services are excluded[2]: • Nursing care requested by, or for the convenience of, the beneficiary or the beneficiary's family. • Transportation. • Home care primarily for personal assistance that does not include a medical component and is not diagnostic, therapeutic, or rehabilitative. • Services provided by a family member or resident in the beneficiary's home. • Services rendered at any site other than the beneficiary's home.

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
Per visit copayment. Per visit coinsurance based on negotiated rate.	1 / 10%	Copayment and coinsurance amounts apply toward maximum.

	Cost ofRecommended Benefits (PMPM)	Cost Impact
Actuarial Impact4	$ 1.02 (HMO) $ 0.91 (PPO)	The HMO Benchmark Model is consistent with the Plan Benefit Model (cost **neutral**). The PPO Benchmark Model includes 20% member coinsurance. Reducing the member coinsurance to 10% will result in a negligible increase to the employer's cost (cost **neutral**).

IV. Recommended Minimum Plan Benefits: Therapeutic Services / Ancillary Services		
H. HOME HEALTH SERVICES *continued*		
Citations		
1. Committee on Child Health Financing, American Academy of Pediatrics	Committee on Child Health Financing, Section on Home Care; American Academy of Pediatrics. Financing of pediatric home health care. *Pediatrics.* 2006; 118(2): 834-838.	Recommended Guidance: Expert Opinion
2. Federal Employee Health Benefit Plan	U.S. Office of Personnel Management, Federal Employees Health Benefits Program. *Sample plan characteristics (Aetna: Individual practice plan with a consumer driven health plan option and a high deductible health plan option).* Available at: https://www.opm.gov/insure/07/brochures/pdf/73-828.pdf. Accessed on January 17, 2007.	Federally Vetted
3. American Dietetic Association	American Dietetic Association. Adapted from: Joint Commission on Accreditation of Healthcare Organizations. *2007 Standards for Ambulatory Care.* 2007:361-362.	Recommended Guidance: Professional Guideline
4. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; July 2007.	Actuarial Analysis

IV. Recommended Minimum Plan Benefits: Therapeutic Services / Ancillary Services

I. HOSPICE CARE

Definition of Benefit	Covered Providers
Medical and social services designed to support and care for persons in the last phase of an incurable illness so that they may live as fully and comfortably as possible.[1]	Covered services must be furnished by or under the direction of a licensed and/or accredited hospice.

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
8 months of coverage for beneficiaries with terminal illnesses.[2]	Additional periods are available as prescribed / authorized.	All medically necessary care. Medical necessity supported by the Plan Benefit Model definition. Covered services also include[2]: • Routine home care, continuous home care, inpatient respite care, and general inpatient care. • Prescribed physician visits. • Nursing care. • Services of home health aides. • Medical social services. • Physical therapy. • Medical appliances and supplies including durable medical equipment rental. • Prescription drugs. • Bereavement services.	All others as defined by the health plan.

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
One-time copayment	Recommended copayment for both HMO or PPO plan types: 5	Copayment applies toward maximum.

Actuarial Impact[3]	Cost ofRecommended Benefits (PMPM)	Cost Impact
	$ 0.08 (HMO) $ 0.08 (PPO)	The HMO/PPO Benchmark Model is consistent with the Plan Benefit Model (cost **neutral**).

Citations

1. National Hospice and Palliative Care Organization Definition of Hospice	von Gunten CF, Ferris FD, Portenoy RK, Glajchen M. *CAPC Manual: How to Establish a Palliative Care Program.* New York, NY: Center to Advance Palliative Care, 2001. Available at: http://64.85.16.230/educate/content/elements/nhpcodefinition.html. Accessed January 1, 2007.	Recommended Guidance: Expert Opinion
2. Hospice Foundation of America	Hospice Foundation of America. *Hospice Services and Expenses.* Available at: http://www.hospicefoundation.org/hospiceInfo/services.asp. Accessed on January 1, 2007.	Recommended Guidance: Expert Opinion
3. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

IV. Recommended Minimum Plan Benefits: Therapeutic Services / Ancillary Services	
J. DURABLE MEDICAL EQUIPMENT (DME), SUPPLIES, & MEDICAL FOODS	
Definition of Benefit	**Covered Providers**
Durable medical equipment (DME) and supplies are necessary medical products suitable for use in the home. DME must be[1]: 1. Prescribed by an attending physician; 2. Considered medically necessary; 3. Primarily and customarily used only for a medical purpose; 4. Designed for prolonged use; and 5. Intended for a specific therapeutic purpose. **Medical foods** are foods used to prevent, treat, or manage a medical condition that requires the addition or restriction of a specific dietary component to address: • A physical, physiologic, or pathologic condition resulting in inadequate nutrition.[2] • An inherited metabolic disorder (does not include common hypercholesterolemia).[2] • A condition resulting in impairment of oral intake that affects normal development and growth.[2] • A condition, such as prematurity, illness, allergy, or separation that does not allow an infant to be breastfed or fed with its own mother's breast milk.[3]	N/A

(continues on page 72)

IV. Recommended Minimum Plan Benefits: Therapeutic Services / Ancillary Services

J. DURABLE MEDICAL EQUIPMENT (DME), SUPPLIES, & MEDICAL FOODS *continued*

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
A. Covers the rental or purchase (at the plan's option) and the repair and adjustment of durable medical equipment. B. Covers food and formula for special dietary use of accepted medical benefit to cover nutritional support costs over and above usual foods. C. Covers banked human milk, including processing and shipping fees.	Include provisions for children with complex case-management needs (e.g., flex benefits).	All medically necessary equipment. Medical necessity supported by the Plan Benefit Model definition. Covered items include[1]: 1. Home dialysis equipment. 2. Oxygen equipment. 3. Hospital beds. 4. Wheelchairs, braces, crutches, and walkers. 5. Continuous passive motion (CPM) and dynamic orthotic cranioplasty (DOC) devices. 6. High-quality breast pumps for assistance with breastfeeding. Limit one per lifetime.[4] Covered devices include[5]: 1. Hearing aids, ALDs, and cochlear implants with accessories. Limit: $2,000 for a hearing aid or ALD allowance per ear every 2 years; replacement earmolds covered in full up to four times per year for children 7 years of age or under; $2,000 cochlear implant speech processor allowance every 5 years; an ALD for use specifically with a cochlear implant covered in full once every 5 years. Covered medical foods include: 1. Foods for supplying particular dietary needs that exist by reason of a physical, physiologic, pathologic, or other condition.[2] 2. Foods for supplying particular dietary needs which exist by reason of age.[2] 3. Foods for supplementing or fortifying the ordinary or usual diet with medically necessary vitamins, minerals, or other dietary properties.[2] 4. Coverage for all medical equipment and medical supplies necessary for the delivery of foods for special dietary use, including, but not limited to, administration tubing, bags, and pumps.[2] 5. Banked donor human milk and requisite supplies: $2,500 limit per infant.[3]	Excluded items[1]: 1. Exercise equipment. 2. Lifts (e.g., seat, chair, or van lifts). 3. Car seats. 4. Air conditioners, humidifiers, dehumidifiers and purifiers. 5. Equipment for cosmetic purposes. 6. Topical Hyperbaric Oxygen Therapy (THBO). 7. Computer equipment, devices, and aids (including computer equipment) such as story boards or other communication aids. 8. All others as defined by the plan.

IV. Recommended Minimum Plan Benefits: Therapeutic Services / Ancillary Services		
J. DURABLE MEDICAL EQUIPMENT (DME), SUPPLIES, & MEDICAL FOODS *continued*		
Recommended Cost-Sharing	**Copayment / Coinsurance Level (0-5 / 0-25%)**	**Out-of-Pocket Maximum**
Per unit coinsurance. Annual limit: $25,000 per person. *Please refer to "Inclusions" list for line-item amounts.*	Recommended coinsurance for both HMO or PPO plan types: 10%	Coinsurance applies toward maximum.
Actuarial Impact[6]	**Cost ofRecommended Benefits (PMPM)**	**Cost Impact**
	DME: $ 2.49 (HMO) $ 2.27 (PPO) **Medical foods:** $ 0.09 (HMO) $ 0.11 (PPO)	**DME:** The HMO/PPO Benchmark Model excludes coverage for hearing aids. Adding coverage for hearing aids will **increase** the employer's plan cost by: • $0.56 PMPM / 0.02% of total plan costs (HMO) • $0.55 PMPM / 0.02% of total plan costs (HMO) **Medical foods:** The HMO/PPO Benchmark Model excludes coverage for medical foods. Adding coverage for medical foods will result in a negligible increase to the employer's plan cost (cost **neutral**).

Citations		
1. Federal Employees Health Benefits Program	Blue Cross Blue Shield. *Federal Employee Program Service Benefit Plan, 2006 Benefits. Section 5(a): Medical Services and Supplies Provided by Physicians and Other Health Care Professionals.* Available at: http://www.fepblue.org/benefits/benefits06/benftsbpbsection5a-06.html#top. Accessed on September 12, 2006.	Federally Vetted
2. American Academy of Pediatrics	Committee on Nutrition; American Academy of Pediatrics. Reimbursement for foods for special dietary use. Policy Statement. *Pediatrics.* 2003; 111(5); 1117-1119.	Recommended Guidance: Expert Opinion
3. United States Breastfeeding Committee	Association of Women's Health, Obstetric and Neonatal Nurses. *United States Breastfeeding Committee Recommendations.* Available at: http://www.usbreastfeeding.org/breastfeeding/index.htm. Accessed on February 1, 2007.	Recommended Guidance: Expert Opinion
4. American Academy of Pediatrics	Section on Breastfeeding. Breastfeeding and the use of human milk. *Pediatrics.* 2005;115(2):496-506.	Recommended Guidance: Expert Opinion
5. American Speech-Language-Hearing Association	American Speech-Language-Hearing Association. *Model Health Care Benefits, Ideal Health Plan Coverages for Audiology and Speech-Language Pathology Services.* Available at: http://www.asha.org/public/add-benefits/model-benefits.htm#speech and http://www.asha.org/public/add-benefits/providers.htm. Accessed on July 12, 2007.	Recommended Guidance
6. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

IV. Recommended Minimum Plan Benefits: Therapeutic Services / Ancillary Services

K. TRANSPORTATION SERVICES

Definition of Benefit	Covered Providers
Transportation by ground ambulance or emergency medical service to the nearest hospital for emergency treatment.	N/A

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
Local professional ambulance transport services to or from the nearest hospital equipped to adequately treat the condition. May require prior approval for lengthy trips.[1]	N/A	Transportation for ground, air, or watercraft when medically appropriate, and when 1) associated with covered hospital inpatient care, 2) related to a medical emergency, or 3) associated with covered hospice care.[1]	• Ambulance transportation to receive non-emergent outpatient or inpatient services. • "Ambulette" / "cabulance" service. • Air ambulance without prior approval.

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
Per unit copayment. Per unit coinsurance based on negotiated rate.	2 / 15% (emergency); 5 / 25%+ (non-emergency)	Copayment and coinsurance amounts apply toward maximum.

Actuarial Impact[2]	Cost ofRecommended Benefits (PMPM)	Cost Impact
	$ 0.61 (HMO) $ 0.45 (PPO)	The HMO/PPO Benchmark Model is consistent with the Plan Benefit Model (cost **neutral**).

Citations		
1. Kaiser Family Foundation	The Henry J. Kaiser Foundation. *Medicaid Benefits: Online Database, Benefits by Service, Definition / Notes (October, 2004).* Available at: http://www.kff.org/medicaid/benefits/sv_foot.jsp#14. Accessed on January 1, 2007.	Industry Standard
2. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

V. Recommended Minimum Plan Benefits: Laboratory, Diagnostic, Assessment, and Testing Services

A. LABORATORY SERVICES

Definition of Benefit	Covered Providers
Medical services that confirm or deny the existence or severity of a particular disease or condition.[1]	Services may be performed by qualified providers in several settings (e.g., inpatient hospital, outpatient hospital, clinic, provider's office). Covered laboratory services may be performed and billed by independent clinical laboratories.

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
No limits	Include provisions for children with complex case-management needs (e.g., flex benefits).	All medically necessary laboratory tests provided or ordered and billed by a qualified provider, including, but not limited to[1]: • Blood tests • Urinalysis • Non-routine Pap tests • Pathology • X-rays	All others as defined by the health plan.

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
Per unit copayment. Per unit coinsurance.	Range: 1-4 / 10%-25% (depending on base cost)	Copayment and coinsurance amounts apply toward maximum.

Actuarial Impact[2]	Cost ofRecommended Benefits (PMPM)	Cost Impact
	$ 6.50 (HMO) $ 6.78 (PPO)	The HMO/PPO Benchmark Model is consistent with the Plan Benefit Model (cost **neutral**).

Citations		
1. Federal Employees Health Benefits Program	Blue Cross Blue Shield. *Federal Employee Program Service Benefit Plan, 2006 Benefits. Section 5(a): Medical Services and Supplies Provided by Physicians and Other Health Care Professionals.* Available at: http://www.fepblue.org/benefits/benefits06/benftsbpbsection5a-06.html#top. Accessed on September 1, 2006.	Federally Vetted
2. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

V. Recommended Minimum Plan Benefits: Laboratory, Diagnostic, Assessment, and Testing Services

B. DIAGNOSTIC, ASSESSMENT, AND TESTING (MEDICAL AND PSYCHOLOGICAL) SERVICES

Definition of Benefit	Covered Providers
Diagnostic, assessment, and testing services designed to confirm or deny the existence or severity of a particular disease or condition.	Services must be furnished by or under the direction of a physician or mental health professional (clinical psychologist, licensed clinical social worker, psychiatric nurse practitioner, psychiatrist). Psychological and neuropsychological tests can be performed by technicians and computers in addition to tests performed by physicians, clinical psychologists, independently practicing psychologists, and other qualified non-physician practitioners.[1]

Recommended Benefit Coverage Limits	Recommended Exceptions	Inclusions	Exclusions
No limits. Some services may require pre-authorization.	Include provisions for children with complex case-management needs (e.g., flex benefits).	All medically necessary diagnostic and assessment tests provided or ordered and billed by an approved provider, including, but not limited to[A]: • Allergy testing. • Basic or comprehensive metabolic panel test. • CAT Scans/MRI. • Ultrasounds. • Neuropsychological examinations, assessments, and related tests. [2,3,B]	All others as defined by the health plan.

Recommended Cost-Sharing	Copayment / Coinsurance Level (0-5 / 0-25%)	Out-of-Pocket Maximum
Per unit copayment. Per unit coinsurance.	Range: 1-4 / 10%-25% (depending on base cost)	Copayment and coinsurance amounts apply toward maximum.

Actuarial Impact[4]	Cost ofRecommended Benefits (PMPM)	Cost Impact
	$ 8.23 (HMO) $ 8.04 (PPO)	The HMO/PPO Benchmark Model is consistent with the Plan Benefit Model (cost **neutral**).

Citations		
1. Center for Medicare and Medicaid Services	CMS Manual System. *Pub 100-02 Medicare Benefit Policy. Effective Date 9/29/06.* Available at: http://www.cms.hhs.gov/Transmittals/downloads/R55BP.pdf. Accessed on September 1, 2006.	Federally Vetted
2. American Psychological Association	American Psychological Association. New Medicare Billing Rules for Testing Services. Available at: http://www.apapractice.org/apo/in_the_news/new_medicare_billing.html#. Accessed on January 6, 2007; American Psychological Association. *Division 40: Clinical Neuropsychology.* Available at: http://www.div40.org/. Accessed on January 4, 2007.	Recommended Guidance: Professional Guideline, Expert Opinion
3. National Academy of Neuropsychology	National Academy of Neuropsychology. *About NAN.* Available at: http://nanonline.org/about.shtm. Accessed on January 15, 2007.	Recommended Guidance: Expert Opinion
4. PricewaterhouseCoopers	PricewaterhouseCoopers LLP. *Actuarial Analysis of the National Business Group on Health's Maternal and Child Health Plan Benefit Model.* Atlanta, GA: PricewaterhouseCoopers LLP; August 2007.	Actuarial Analysis

[A] A comprehensive recommendation regarding genetic testing is beyond the scope of this document. Employers should consult with their plan administrator(s) about the evidence of benefit for genetic testing. Employers are encouraged to provide coverage for genetic testing when it meets medical necessity criteria for the beneficiary or his/her family, and when the results of the test will inform a major medical decision (e.g., selecting one type of treatment over another, terminating a pregnancy).

[B] Neuropsychological evaluations are important when determining or outlining subtle and severe neurocognitive deficits among patients with cerebrovascular conditions, traumatic brain injury, epilepsy, multiple sclerosis, and HIV; as well as hydrocephalus, neurotoxic exposure, brain tumors; and other common medical conditions such as thyroid and collagen-vascular disorders, among others. Neuropsychological evaluations also provide critical adjunctive information for the diagnosis of conditions such as dementia.

2 Maternal and Child Health Plan Benefit Model: Evidence-Informed Coverage

The Benefits of Prevention and Early Detection: A Cost-Offset Addendum to the Actuarial Analysis of The Maternal and Child Health Plan Benefit Model

This document is an addendum to the actuarial analysis tables located on page 18-31. It provides an annotated bibliography of studies that support the cost-offset value of prevention.

Introduction

The Maternal and Child Health Plan Benefit Model (Plan Benefit Model) emphasizes prevention. Some clinical preventive services prevent disease or injury (e.g., cervical cancer screening); others catch disease in early stages when treatment is most effective and least expensive (e.g., STI screening). Because clinical preventive services can prevent or reduce the need for treatment, they provide a **cost-offset**. Employers who invest their healthcare dollars in screening, counseling, and preventive medications may be able to avoid spending healthcare dollars on treatment services. In some cases, when the cost of screening is *less* than the cost of treatment, employers may be able to save healthcare dollars by investing in prevention.

This annotated bibliography provides an overview of key studies that support the cost-offset value of prevention. Employers are encouraged to analyze their own claims data, and review other sources, in order to identify additional cost-offset opportunities.

Key Definitions

A health intervention is termed **cost-saving** when the reduction in costs resulting from the intervention exceeds the cost required to develop and deliver the intervention.

A health intervention is considered **cost-effective** when the net cost per unit of health generated (e.g., fewer sick days, fewer cases of measles) is favorable relative to other health services. Cost-effective interventions do not reduce net healthcare costs, but they provide a good value per dollar.

I. Preventive Services

a. Well-Child Services

Impact: *Cost-effective*

Cost-effectiveness analyses of well-child care are limited; however, some studies have predicted cost-offsets or cost-savings associated with comprehensive and timely preventive care for children and adolescents.

- A study conducted by the American Academy of Pediatrics (AAP) found that it would have cost $4.3 billion to provide comprehensive clinical preventive services to all 10- to 24-year-olds in 1998. If the delivery of comprehensive clinical preventive services (as defined by the AAP) prevented 1% of the $700 billion in costs associated with preventable adolescent injuries, a hypothetical net savings of $2.7 billion would result.
  Reference: Hedberg VA, Bracken AC, Stashwick CA. Long-term consequences of adolescent health behaviors: implications for adolescent health services. *Adolesc Med.* 1999;10(1):137-151.
- Several studies have demonstrated cost-savings associated with preventive care for publicly-insured children. For example, Medicaid-enrolled children who are up-to-date on their well-child check-ups through 2 years of age are 48% less likely to experience an avoidable hospitalization.
  Reference: Hakim RB, Bye BV. Effectiveness of compliance with pediatric preventive care guidelines among Medicaid beneficiaries. *Pediatrics*. 2001:108; 90-97.
- Children with incomplete well-child care in the first 6 months of life are significantly more likely than children with complete care to visit an emergency department for an upper respiratory tract infection, gastroenteritis, or asthma. In fact, children with incomplete care are 60% more likely to visit an emergency department for any cause compared to children who are up-to-date on their well-child care. ***Reference:*** Hakim RB, Ronsaville DS. Effect of compliance with health supervision guidelines among U.S. infants on emergency department visits. *Arch Pediatr Adolesc Med.* 2002;156:1015-1020.
- When well-care visits for children aged 0 to 4 years include parental injury prevention counseling using the AAP's TIPP sheets, the cost is $2,800 per quality-adjusted life year saved (in year 2002 dollars). This counseling is cost-effective when judged using commonly accepted cost-effectiveness benchmarks.
  Reference: Miller TR, Galbraith MS. Injury prevention counseling by pediatricians: A benefit-cost comparison. *Pediatrics*. 1995;96:1-4.

b. Immunizations

7-Vaccine Routine Childhood Immunization Schedule

Impact: *Cost-saving*

Background: Numerous studies have documented that the cost of providing immunizations to children and adolescents is less expensive than treating vaccine-preventable diseases.
Summary: The cost of providing the 7-vaccine series to children was estimated at $2.3 billion (direct) and $2.8 billion (societal). In the absence of vaccination, the cost of disease among children would amount to $12.3 billion in direct costs and $46.6 billion in societal costs (societal costs

include lost productivity due to premature mortality and permanent disability, and lost opportunity costs associated with caretakers taking time off work to care for ill children). Therefore, the 7-vaccine series demonstrated a net direct cost-savings of $9.9 billion and a net societal cost-savings of $43.3 billion.
Methods: A decision tree was constructed using a hypothetical cohort of infants born in one year in the United States (n= 3.8 million). Population-based estimates of vaccination coverage, published vaccine efficacies, historical data on disease incidence prior to vaccination, and disease incidences for 1995-2001 were used to determine direct and societal costs.
Reference: Zhou F, Santoli J, Messonnier ML, et al. Economic evaluation of the 7-vaccine routine childhood immunization schedule in the United States, 2001. *Arch Pediatr Adolesc Med.* 2005;159(12):1136-1144.

Rotavirus Vaccination (*New immunization not captured in the 7-vaccine series*)
Impact: *Cost-effective*

Background: Rotavirus is a common illness among children in the United States. The illness can lead to severe dehydration, physician visits, hospitalization, emergency department visits, and death.
Summary: Though not likely to be cost-saving, the rotavirus vaccine is considered cost-effective from both direct-cost and societal-cost perspectives. A national rotavirus immunization program was estimated to prevent 13 deaths, 44,000 hospitalizations, 137,000 emergency department visits, 256,000 office visits, and 1.1 million episodes requiring a parent to stay at home with a child under 5 years of age. This study concluded that the rotavirus vaccination would generate a cost-effectiveness ratio of $336 per case prevented from the health care perspective, and $138 per case prevented from the societal perspective. Nevertheless, a second study concluded that a universal rotavirus vaccine program in the US would cost $77.30 per case averted from the health care and give a net saving of $80.75 per case averted from the societal perspectives, respectively. The cost per quality-adjusted life-year (QALY) was found to be $104,610 when we considering a child with one caregiver.
Methods: A cost-effectiveness analysis was performed using the Monte Carlo method, taking into account both societal and direct-cost perspectives. Using cumulative probability distributions, the investigators (a) estimated the total annual number of rotavirus cases for a cohort of 4 million children between 0 and 59 months of age, and (b) calculated the number of cases that would require healthcare and the associated costs. They then compared these figures to the cost of a vaccination program. However, this study used intermediate outcomes (i.e. cases and hospitalizations) rather than quality-adjusted life-years (QALYs) gained. The 2009 study incorporated herd immunity into the cost-effectiveness analysis and indicated that a rotavirus vaccination program would prevent about 90% of rotavirus incidence, mortality, hospitalization and emergency department visits annually.
References: Shim E, Galvani AP. Impact of transmission dynamics on the cost-effectiveness of rotavirus vaccination. *Vaccine*. 2009;27:4025-4030.
Widdowson MA, Meltzer MI, Zhang X, Bresee JS, Parashar UD, Glass RI. Cost-effectiveness and potential impact of rotavirus vaccination in the United States. *Pediatrics*. 2007;119(4):684-697.

Adolescent Vaccines

Impact: *Some cost-effective, some cost-saving in limited populations*

Summary: Adolescent vaccines are less cost-effective than childhood vaccines and none are cost-saving at the population level. However, adolescent vaccines do provide sizable health benefits. From the societal perpective, the hepatitis A and B; and pertussis, tetanus, and diphtheria combination (Tdap) vaccines are cost-saving for limited populations (college freshmen and 10 to 19-year-olds, respectively). From the payer perspective, adolescent vaccines cost $9,000 to $219,000 per life-year saved. Among recently recommended immunizations, the most cost-effective are the pertussis and human papillomavirus (HPV) vaccines. The least cost-effective immunization is the meningococcal vaccine.

Methods: A systematic review of the economic literature on adolescent vaccines was conducted and results were synthesized.

Reference: Ortega-Sanchez IR, Lee GM, Jacobs R, Prosser LA, Molinari NA, Zhang X, et al. Projected cost-effectiveness of new vaccines for adolescents in the United States. *Pediatrics*. 2007;121 suppl:S63-S78.

c. Preventive Dental Services

Preventive Dental Visits

Impact: *Cost-saving*

Background: Early dental visits appear to establish a pattern of preventive dental maintenance among children. Early dental visits reduce future dental risk by improving oral health. As oral health improves, oral health costs decrease.

Summary: Early dental visits are cost-effective in reducing the need for restorative care, even though early visits appear to increase the utilization of preventive care services (and preventive costs) later in childhood. In fact, there is a correlation between the age of a child's first dental visit and their total (preventive and restorative) dental costs.

Methods: A cohort of preschool-aged Medicaid-enrolled children were classified in two groups: those who had received a preventive dental visit before age one and those who had not. Health records were analyzed for increased rates of preventive visits, restorative care, and emergency visits. Utilization was used as a proxy for direct costs.

Reference: Lee JY, Bouwens T, Savage MF, Vann WF Jr. Examining the cost-effectiveness of early dental visits. *Pediatr Dent.* 2006;28:102-105.

Age at First Dental Visit	Total Dental Costs
Before age 1	$262
1- 2 years	$399
2- 3 years	$449
3- 4 years	$492
4-5 years	$546

Pediatric Dental Sealants

Impact: *Cost-effective in high-risk populations*

Background: Dental sealants are used to prevent dental caries in children. Dental caries (cavities) are caused by the acid byproducts of oral bacteria. They cause pain, and require restorative treatment to prevent further decay and infection.

Summary: From the third-party payer, direct-cost perspective, dental sealants used on children aged 5 to 7 years are cost-effective because they reduce the need for restorative care. Approximately 11% of children who had sealant treatment required subsequent restorative care, while 33% of children without sealants required restorative care. The cost of restorative care among patients with sealants was $55.50, while the cost of restorative care among patients without sealants averaged $71.90. These findings are limited to high-risk populations. When applied to a broader population, dental sealants would likely have a more moderate cost-effectiveness ratio due to the reduced incidence of dental caries. When examining both high and low risk populations, a second study concluded risk-based sealants cost an estimated $53.80 and sealing all populations was $54.60, compared to $68.10 for the non-sealed populations. The analysis indicated sealing no teeth was more costly and less effective than the other two strategies. Sealing all was found to be the most effective strategy as it cost $13.50 per tooth and an additional $.08 per tooth for each cavity-free month gained.

Methods: The first study used the direct-cost perspective and used actual Medicaid reimbursements for 9,549 children enrolled in the Alabama Medicaid program. The second study was based off of a Markov model used to construct events representing the natural history of sealant retention, cavity formation, and their associated health states. The outcome measures were the incremental cost per month gained in a cavity-free state over a ten-year period.

References: Dasanayake AP, Li Y, Kirk K, Bronstein J, Childers NK. Restorative cost-savings related to dental sealants in Alabama Medicaid children. *Pediatr Dent.* 2003 Nov-Dec;25(6):572-6.
Quinonez RB, Downs SM, Shugars D, Christensen J, Vann WF. Assessing cost-effectiveness of sealant placement in children. *Journal of Public Health Dentistry.* 2005;65(2):82-89.

Fluoride Varnish

Impact: *Cost-effective in high-risk populations*

Background: Fluoride varnish protects teeth from enamel erosion. Fluoride varnish has been shown to reduce dental caries by as much as 38% in children.

Summary: The application of fluoride varnish was found to be cost-effective in reducing early childhood caries in low-income populations. Fluoride varnish cost $7.18 for each cavity-free month gained per child and $203 per treatment averted.

Methods: The study used a decision tree analysis and a Markov model to calculate the effects of dental disease and treatment costs after fluoride varnish. The population sample was limited to Medicaid-enrolled children, and the analysis took the Medicaid payer's perspective. Since children enrolled in Medicaid are generally low-income and at higher risk for dental disease, the findings are limited to similar low-income, high-dental-risk populations. It is unclear if fluoride varnish would be cost-effective in the general population.

Reference: Quinonez RB, Stearns SC, Talekar BS, Rozier RG, Downs SM. Simulating cost-effectiveness of fluoride varnish during well-child visits for Medicaid-enrolled children. *Arch Pediatr Adolesc Med.* 2006;160(2):164-170.

d. Early Intervention Services for Mental Health / Substance Abuse

Impact: *Probably Cost-saving*

Background: Data to support the cost-effectiveness of early intervention services for non-Medicaid adolescent populations are limited. However, experience with adults suggests that early intervention services provide a cost-offset by addressing mental health conditions early, before they escalate into mental illness or substance abuse disorders that require long-term or intensive care.
References: Holder HD, Cunningham DW. Alcoholism treatment for employees and family members: its effect on health care costs. *Alcohol Health and Res World.* 1992;16:149-153.
American Psychological Association. *Defining medical cost offset: Policy implications.* Available at: http://www.apa.org/practice/offset3.html. Accessed on September 7, 2007.

e. Preventive Vision Services

Vision Screening

Impact: *Cost-effective*

Background: Eye disorders are the most common reason that children become handicapped in the United States. Some eye disorders, including cataracts, strabismus, refractive error, astigmatism, and ocular disease, cause severe and permanent vision damage or blindness. Other problems can be corrected with glasses, patching, eye drops, or optical blurring.
Summary: This article evaluated the costs and benefits of vision screening methods for preschoolers and school-aged children. All of the benefit-to-cost ratios exceeded 1.0, meaning that all of the studied screening programs had long-term benefits (e.g., reduced disability) that exceeded the cost of screening.
Methods: A decision analytic model was used to compare visual acuity screening and photoscreening in children at three different age intervals. Published estimates from the literature, managed care databases, and U.S. Government sources were used to provide epidemiological data and cost data.
Reference: Joish V, Malone D, Miller J. A cost-benefit analysis of vision screening methods for preschoolers and school-age children. *J AAPOS.* 2003;7(4):283-90.

f. Preventive Audiology Screening Services

Newborn Hearing Screening Example

Impact: *Cost-effective*

Background: Congenital hearing loss affects between 1 and 3 out of every 1,000 children. Hearing loss carries a lifetime of medical and social costs, including special education, adaptive equipment, social and community services, and lost wages due to underdevelopment of language and reading ability. Early detection and subsequent intervention can improve language acquisition and later school and work performance for children with hearing loss. Universal screening can detect 86 out of 110 cases of hearing loss per 100,000 children screened.
Summary: Newborn hearing screening strategies were examined for cost-effectiveness. Universal

newborn hearing screening was found to cost approximately $44,000 per quality-adjusted life year saved when deafness was diagnosed within 6 months of age. This figure is cost-effective in comparison to commonly accepted cost-effectiveness benchmarks. A second study found that the expected cost of universal newborn hearing screening was -$1750, indicating that the long-term value of performing the test exceeds the immediate costs when the probability of each test outcome is considered. This result is the expected cost each time the screening test is administered, so this cost should be multiplied by the total number of tests to be administered to find the total expected costs for all tests.
Methods: Using the societal perspective, investigators performed a cost-effectiveness analysis on a hypothetical birth cohort of 80,000 infants. Projected outcomes of (a) no screening, (b) selective screening, and (c) universal screening were compared. The second study utilized test performance ratios in relation to cost effectiveness to calculate the expected cost for universal newborn hearing and screening.
References: Keren R, Helfand M, Homer C, McPhillips H, Lieu TA. Projected cost-effectiveness of statewide universal newborn hearing screening. *Pediatrics*. 2002;110(5):855-864.
Gorga MP, Neely ST. Cost-effectiveness and test-performance factors in relation to universal newborn hearing screening. *Mental Retardation and Developmental Disabilities Research Reviews.* 2003;9:103-108.

g. Unintended Pregnancy Prevention Services

Impact: *Cost-saving*

Adolescents
Background: Each year in the United States, one out of every eight women aged 15 to 19 years becomes pregnant. Eighty-five percent (85%) of these pregnancies are unintended, meaning that they are either unwanted or mistimed. The social and economic consequences of teenage pregnancy are substantial. Each year unintended pregnancies among adolescents cost more than $1.3 billion in direct healthcare expenditures. Induced and spontaneous abortions that result from adolescent pregnancy cost more than $180 million. Effective contraceptives prevent unintended pregnancy; many also have the added benefit of protecting adolescents from sexually transmitted infections (STIs).
Summary: Under the most conservative assumptions, the average annual cost of not using contraception was estimated at $1,267 per adolescent at risk of unintended pregnancy. In private medical practice, savings range from a low of $1,794 for the use of spermicides at 1 year of use to a high of $12,318 for levonorgestrel implants at 5 years; in the public sector, savings range from a low of $779 for spermicides at 1 year of use to a high of $5,420 for levonoregestrel implants at 5 years.
Methods: A cost analysis was performed comparing (a) the cost of using 11 different methods of contraception (required physician visits or supplies), the cost of treating negative side effects (as well as the cost avoided due to beneficial side effects such as cancer prevention), and the cost of unintended pregnancies (births, spontaneous abortions, induced abortions, and ectopic pregnancies) that occurred during contraceptive use, to (b) the cost of not using any method of contraception. Costs were analyzed from both the private-payer perspective and the public-sector perspective. Private-sector costs were derived from the 1993 Medstat MarketScan database, which contains payment information from large-employer programs, Blue Cross/Blue Shield plans, and other third-party payer plans.
Reference: Trussell J, Koeing J, Stewart F, Darroch JE. Medical care cost-savings from adolescent contraceptive use. *Family Plan Persp.* 1997:29:248-203 & 295.

Davtyan C. Contraception for adolescents: evidence-based case review. *The Western Journal of Medicine.* 2000;172:166-171.

All Women
Summary: All contraceptive methods evaluated in this study produced a significant cost-savings in as little as one year from the societal perspective. Savings were derived from both financial savings and health gains. Compared to no contraception, oral contraceptives result in cost-savings of $8,827, the vaginal ring results in cost-savings of $8,996, and the monthly injectable results in cost-savings of $8,770.
Methods: A cost-utility analysis was completed using a Markov model and the societal perspective. Costs were calculated based on women of average health and fertility ranging from 15 to 50 years of age, who were sexually active and in a mutually monogamous relationship. Costs included professional fees, supplies, medications, fitting/insertion, and/or surgical and facility costs, depending on the method.
Reference: Sonnenberg FA, Burkman RT, Hagerty CG, Speroff L, Speroff T. Costs and net health effects of contraceptive methods. *Contraception*. 2004;69(6):447-459.

h. Preventive Preconception Care
Impact: *Cost-saving*

Background: Women with poorly controlled chronic disease prior to conception (or during the early stages of pregnancy) are at higher risk for complications during pregnancy. For example, poorly controlled diabetes is associated with a higher risk of birth defects, fetal death, and macrosomia for the infant; poorly controlled diabetes also increases a pregnant woman's risk for organ damage. Preconception care includes (a) preventive services and screening offered to women who expect to become pregnant in the near future, (b) preconception care for women who have given birth and intend to bear another child at some point in the future, and (c) counseling about the impact of preexisting health conditions on pregnancy outcomes.
Summary: From the direct-cost perspective, preconception care was found to be cost-saving.

- In a prospective analysis of a hypothetical comprehensive preconception care program, maternal and infant hospitalization costs were reduced by $1,720 per enrollee (woman). The investigators calculated that every $1 spent on preconception care would save $1.60 in maternal and fetal care costs.
- In a matched retrospective analysis of a cohort from California, investigators observed reduced maternal and infant hospitalization costs of $5.19 for every $1 spent on preconception care.
- In a third study, women enrolled in a preconception care program (the intervention group) received two outpatient visits prior to pregnancy and then regular prenatal care. Pregnant women in the intervention group experienced fewer congenital malformations (4.2% versus 13.5%) compared to women in the prenatal care-only group. The infants of women in the preconception care program were also 50% less likely to require neonatal intensive care unit (NICU) hospitalization.

Methods: A meta-analysis of three prior studies on preconception care.
Reference: Grosse SD, Sotnikkov SV, Leatherman S, Curtis M. The business case for preconception care: methods and issues. *Matern Child Health J.* 2006;10(5 Suppl):S93-9.

i. Preventive Prenatal Care

Impact: *Cost-saving in high-risk populations*

- For high-risk populations, intensive prenatal care offers significant cost-savings over conventional care. Savings mainly result from reduced hospital and NICU admission rates among neonates. Depending on the population, cost-savings range from $1,768 to $5,560 per infant/mother pair.
  References: Reece EA, Lequizamon G, Silva J, Whiteman V, Smith D. Intensive interventional maternity care reduced infant morbidity and hospital costs. *J Matern Fetal Neonatal Med.* 2002;Mar11(3):204-210; Ross MG, Sandhu M, Bernis R, Nessim S, Bradonier JR, Hobel C. The West Los Angeles preterm birth prevention project II. Cost-effectiveness analysis of high-risk pregnancy interventions. *Obstet Gynecol.* 1994;83(4): 506-511.
- One study that evaluated the effects of augmented prenatal care on women at high risk for a low birthweight (LBW) birth who were enrolled in a managed care organization, found a positive return on investment (ROI). The program included basic prenatal care, prenatal education, and case management. The program saved $13,961.42 per single LBW birth prevented and $18.981.08 per multiple (e.g., twins) LBW birth prevented. After program costs were considered, the return on investment equaled 37%; for every dollar invested in the program, $1.37 was saved.
  Reference: Sackett K, Pope RK, Erdley WS. Demonstrating a positive return on investment for a prenatal program at a managed care organization: an economic analysis. *J Perinat Neonat Nur.* 2004;18(2):117-127.
- Many of the individual interventions that comprise prenatal care are either cost-saving or cost-effective. However, there is considerable disagreement in the field with regards to the cost-effectiveness of comprehensive prenatal care among low- or medium-risk women in the general population. New research has pointed out methodological flaws in many older studies that indicated prenatal care was cost-effective population wide. For more information, please refer to:
  - Goulet C, Gevry H, Lemay M, et al. A randomized clinical trial of care for women with preterm labour: home management versus hospital management. *Canadian Medical Association Journal*. 2001;164(7):985-991.
  - McCormick MC. Prenatal care—necessary but not sufficient. *Health Services Research*. 2001;36(2):399-403.
  - Fiscella K. Does prenatal care improve birth outcomes? A critical review. *Obstet and Gynecol*. 1995;85(3):468-79.
  - Hueston WJ, Quattlebaum RG, Benich JJ. How much money can early prenatal care for teen pregnancies save?: a cost-benefit analysis. *Journal of the American Board of Family Medicine*. 2008;21(3):184-189.
  - Lu MC, Toche V, Alexander GR, Kotelchuck M, Halfon N. Preventing low birthweight: is prenatal care the answer. *J Matern Fetal Neonatal Med*. 2003;13: 362-380.
  - Alexander GR, Korenbrot G. The role of prenatal care in preventing low birth weight. *The Future of Children*. 1995;5:103-20.
  - Alexander GR, Kotelchuck M. Assessing the role and effectiveness of prenatal care: history, challenges, and directions for future research. *Public Health Rep*. 2001;116:306-316.

j. Preventive Postpartum Care

Breastfeeding Promotion /Lactation Consultation Examples
Impact: *Cost-saving*

Background: Breastfeeding improves the short- and long-term health of women and their infants, and breastfed infants have lower total healthcare costs than infants who are not breastfed. Breastfeeding decreases the incidence or severity of diarrhea, lower respiratory infections, otitis media, bacterial meningitis, botulism, UTIs, and necrotizing enterocolitis. It may also protect against sudden infant death syndrome (SIDS), insulin-dependent diabetes, and allergic diseases. Benefits to mothers include reductions of hip fractures during menopause, less postpartum bleeding, and reduced risk of ovarian and pre-menopausal breast cancers. Health plans and private payers can realize savings from supporting the promotion of exclusive breastfeeding.
Summary: Compared to breastfed infants, formula-fed infants cost the healthcare system more money in their first-year of life due to their increased rate of illness and hospitalization. For example, in the first year of life, never-breastfed infants (compared to breastfed infants) experience 2,033 excess office visits, 212 excess days of hospitalization, and 609 excess prescriptions per 1,000 infants. This additional health care cost the managed care system studied between $331 and $475 per never-breastfed infant. A second study found that hospital, doctor, or clinic visits for four or more upper respiratory tract infections were significantly greater if predominant breastfeeding was stopped before 2 months or partial breastfeeding was stopped before 6 months. Predominant breastfeeding for less than six months was associated with an increased risk for two or more hospital, doctor, or clinic visits and hospital admission for wheezing lower respiratory illness. Breastfeeding for less than 8 months was associated with a significantly increased risk for two or more hospital, doctor, or clinic visits or hospital admissions because of wheezing lower respiratory illnesses. A third study found infants who were exclusively breastfed for six months experienced less morbidity from gastrointestinal infection than those who were mixed breastfed for three or four months, and no deficits were demonstrated in growth among infants from either developing or developed countries who were exclusively breastfed for six months or longer.
Methods: Epidemiological information was collected on the most common childhood illnesses, along with cost data for the treatment of these illnesses. Data was analyzed to ascertain the excess medical costs associated with formula-feeding. The second study was conducted via a literature review. The third study was a prospective birth cohort of 2,602 liveborn children in Perth, Western Australia.
References: Ball TM, Wright AL. Health care costs of formula-feeding in the first year of life. *Pediatrics*. 1999;103(4):870-876.
Kramer MS, Kakuma R. Optimal duration of exclusive breastfeeding. *Cochrane Database System Review*. 2002;1
Oddy WH, Sly PD, Kde Klerk NH, et al. Breastfeeding and respiratory morbidity in infancy: a birth cohort study. *Archives of Disease in Childhood*. 2003;88:224-228

k. Preventive Services (General)

Impact: *Cost-saving or cost-effective*

In general, clinical preventive services are cost-effective; some are cost-saving. Examples of the cost-offset of clinical preventive services recommended in the Plan Benefit Model follow:

Children and/or Adolescents		Childbearing-age Women/ Pregnant Women
Alcohol misuse screening and counseling	Not available	Cost-saving: Each $1 invested in screening and brief counseling interventions saves approximately $4 in healthcare costs.[1, 2]
Chlamydia screening	Cost-effective/cost-saving: Screening for chlamydia allows clinicians to identify affected patients and begin treatment earlier in the course of disease, thereby improving outcomes and avoiding the health and economic consequences of latent disease such as pelvic inflammatory disorder (PID) and infertility.[3] A review of 10 cost-effectiveness studies found that screening was more cost-effective than simply testing symptomatic women, and that in some instances, screening was cost-saving even at prevalence rates as low 1.1%.[4]	
Cervical cancer screening	Cost-effective: A conventional Pap test repeated every 3 years from the onset of sexual activity up to the age of 75 costs $11,830 per quality-adjusted life year saved (in year 2000 dollars).[5] In comparison to other preventive interventions and to commonly accepted cost-effectiveness benchmarks, cervical cancer screening is highly cost-effective.[6]	
Gonorrhea screening	Cost-effective/cost-saving: Screening for gonorrhea allows for the early recognition of disease and immediate treatment, which can prevent the costly complications of late-stage disease such as PID. The average lifetime cost of PID has been estimated to range from $1,060 to $3,626 in year 2000 dollars.[7] The average lifetime cost for women who develop major complications of PID is $6,350 for chronic pelvic pain, $6,840 for an ectopic pregnancy, and $1,270 for infertility: 79% of these costs have been found to occur within 5 years of the precipitating infection.[8]	
HIV screening	Not available	Cost-saving: Compared to no screening, a universal screening program targeting pregnant women would save an estimated $3.69 million dollars and prevent 64.6 cases of pediatric HIV infection for every 100,000 pregnant women screened.[9]
Lead screening	Cost-effective/cost-saving: Compared to no screening, universal screening of all 1-year old children for elevated blood lead levels (BLLs) would produce economic benefits exceeding program costs in communities where at least 11% to 17% of children have elevated BLLs.[10]	Not applicable
Sexually Transmitted Infections (STI) (Combined Data)	Avoiding adverse outcomes of pregnancy associated with untreated STIs can offset 19% to 35% of the costs of prenatal care in certain populations of high-risk women.[11]	
Syphilis	Not available	Cost-effective: Serological screening of pregnant women can be cost-effective even when there is a very low prevalence of maternal infection because screening is inexpensive while treating congenital syphilis is costly.[12] For example, treatment for early stage syphilis ($41.26) is much less expensive than treatment for later stage disease ($2,062) (both figures in year 2001 dollars).[13]
Tobacco use screening and counseling	Cost-effective: Cost data on adolescent tobacco cessation is limited, but in adult populations the cost-effectiveness of tobacco cessation programs is quite well-established, with many approaches yielding costs under $1,000 per quality-adjusted life year saved.[14]	Cost-saving: Tobacco cessation treatment for pregnant women is considered one of the most cost-saving preventive services.[15,16] Clinical trials have shown that $6 are saved in healthcare costs for every $1 invested in smoking cessation programs for pregnant women.[17]

1. Fleming MF, Mundt MP, French MT, Manwell LB, Stauffacher EA, Barry KL. Brief physician advice for problem alcohol drinkers: long-term efficacy and benefit-cost analysis. A randomized controlled trial in community-based primary care settings. *Alcohol Clin Exp Res*. 2002;26:36-43.
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17. Marks JS, Koplan JP, Hogue CJR, et al. A cost-benefit/cost-effectiveness analysis of smoking cessation for pregnant women. *Am J Prev Med*. 1990;6:282-291.

II. Recommended Levels of Care for Physician/Practitioner Services

Not Applicable

III. Emergency Care, Hospitalization, and Other Facility-Based Care

Not Applicable

IV. Therapeutic Services/Ancillary Services

j. Durable Medical Equipment, Supplies, Medical Food

Durable Medical Equipment
Cochlear Implants in Children
Impact: *Cost-effective*

Summary: Cochlear implants in children are cost-effective from the direct medical perceptive and cost-saving from the societal perspective. Cochlear implants for children with bilateral deafness result in lifetime cost-savings of $53,198 per child when indirect costs like changes in future education and earning potential are considered.
Methods: Pre-intervention, post-intervention, and cross-sectional surveys were administered to parents of profoundly deaf children with a cochlear implant or anticipating a cochlear implant.
Reference: Cheng AK, Rubin HR, Power NR, Mellon NK, Francis HW, Niparko JK. Cost-utility analysis of the cochlear implant in children. *JAMA*. 2000;284(7):850-856.

Medical Foods
Donor Breast Milk Example
Impact: *Cost-saving for limited populations*

Background: The health benefits of human breast milk have been well-established. Breast milk provides growth factors, hormones, digestive enzymes, and immunologic factors, which are impossible to replicate with formula. Many preterm infant/mother pairs are unable to breastfeed; without access to donor milk, these infants are unable to receive the health benefits of breast milk.
Summary: Preterm infants who do not receive human breast milk are at an increased risk for costly health problems such as necrotizing enterocoltis and sepsis. The incremental cost of *not* feeding preterm infants human milk is $9,669 per infant, even when the cost of alternate forms of nutrition are included. Using donor human breast milk could save approximately $11 in NICU costs for each $1 spent on donor milk if the mother's milk is unavailable for two months, and $37 for each $1 spent on donor milk if the mother's milk is unavailable for 1 month.
Methods: A cost-effectiveness analysis from the direct-cost perspective was performed using data from published articles.
Reference: Wight NE. Donor human milk for preterm infants. *J Perinatol*. 2003;21:249-254.

V. Laboratory Diagnostic, Assessment, and Testing Services
Not Applicable

3 Maternal and Child Health Balanced Scorecard & Analysis Tools

- Technical guidance for developing a maternal and child health balanced scorecard and strategy map. Employers can use these tools to identify and evaluate the relationships between maternal and child health outcomes and organizational performance.
- A side-by-side comparison tool that employers can use to contrast their current PPO and HMO plan benefits and coverage levels to the Maternal and Child Health Plan Benefit Model.

Maternal and Child Health Balanced Scorecard

This document provides employers with technical guidance for developing a maternal and child health balanced scorecard and strategy map. Employers can use these tools to identify and evaluate the relationships between maternal and child health outcomes and organizational performance.

Introduction

Employer-Sponsored Benefits

Research shows that most large employers offer employees comprehensive health benefits. These benefits address employees' health needs and protect businesses against losses from employee illness.[1] Most large employers also offer health benefits to employees' dependents.[1] Dependent coverage enhances employee recruitment and retention, and reduces the direct and indirect costs associated with family illness. In addition to health benefits, most large employers also offer **work/life benefits** (e.g., childcare, flex-time), which have been proven to increase employer attractiveness and boost employee loyalty.[2,3]

Focusing on Maternal and Child Health: A Business Issue

Children, adolescents, and women of childbearing age are an important part of an employer's beneficiary population. Children, adolescents, and pregnant/postpartum women comprise 33% of a typical large employer's beneficiary population and are responsible for 18.5% of healthcare costs (this estimate does not include dental care).[6] While average costs for children are low in comparison to other populations (e.g., the elderly, adults with chronic conditions), healthcare costs for neonatal care, children with special health care needs, and children who experience injuries and certain acute illnesses can be significant. The health of children and pregnant women is also an important determinant of overall population health: Healthy women give birth to healthier babies, and healthy children are more likely to become healthy adults. Both factors have important implications for the future workforce.

There is wide variation in the benefits large employers offer. Business Group membership and national surveys have found significant inconsistencies in the methods employers use to [4,5]:

- Design health plan benefits and coverage levels.
- Develop administration rules.
- Communicate plan characteristics.
- Evaluate the impact of health and work/life benefits.

Variation in benefit design exists across the board; however, variation in maternal and child health benefits (healthcare benefits designed for preconception, pregnant, and postpartum women; children; or adolescents) is particularly pronounced.[4]

Some of the variation is a result of unique employee need due to geographic location, the work environment, or other relevant factors. Variation also occurs as a result of labor union negotiations and differing capital levels. While tailoring can be used to meet diverse needs, variation can lead to fragmentation, beneficiary confusion, and administrative costs. The extreme cost, quality, and access variation seen in the marketplace today suggests that employers are not maximizing their investment in health benefits. Employers may be able to improve their return on investment in health benefits by improving the alignment between health benefits, organizational strategy, and internal operations.

Rationale for Using the Balanced Scorecard

The **Balanced Scorecard methodology** described in this document is one approach shown to be effective in helping companies achieve strategic/operational alignment.[7] The Balanced Scorecard can also help companies evaluate their current health benefits and make informed choices about which Plan Benefit Model recommendations to adopt.

The Balanced Scorecard methodology provides employers with tools to:

- **Develop a maternal and child health strategy.**
- **Evaluate existing health benefits.**
- **Implement and track Plan Benefit Model recommendations.**
- **Design and evaluate other maternal and child-focused health and work/life benefits.**

The Balanced Scorecard Methodology: Aligning Health Benefits and Business Strategy

Kaplan and Norton developed the Balanced Scorecard concept from research performed in the 1990s.[7] The Balanced Scorecard resulted from a hypothesis stating that an organization's reliance on financial data as the primary measure of its value limited the appreciation of the real or full value of the organization. They argued that financial measures did not accurately capture performance in a fast-evolving, service-based economy. Furthermore, they believed

financial measures based on past performance provided limited insight into future performance. Financial measures, they posited, have the unintentional consequence of reinforcing functional silos and inhibiting long-term thinking. Kaplan and Norton proposed that the real value of an organization lies more in its people than tangible, fixed assets.[7] With the Balanced Scorecard, Kaplan and Norton developed a model that could capture financial value along with the meaningful intangible values of an organization.

The Balanced Scorecard methodology recognizes that financial performance is the primary measure of performance, but not the sole measure of organizational success.

Balanced Scorecard Perspectives

The Balanced Scorecard Model (Figure 3A), is used to quantify organizational performance from multiple perspectives and to support a forward-looking strategy.[7]

By applying a Balanced Scorecard approach, an organization can create a critical list of performance measures, which can then be used to manage and improve production, meet customer needs, and support shareholder expectations.

The model is separated into four measurement categories: Financial, Customer, Internal Business Process, and Learning and Growth. Each measurement category, or "**perspective**", is supported by a set of quantitative and/or qualitative business metrics that 'map' to the organization's overall strategy. These metrics facilitate the identification of strengths and weaknesses. Kaplan and Norton believe the metrics contained in these four perspectives provide a comprehensive assessment of an organization's performance in relation to the organization's strategy.

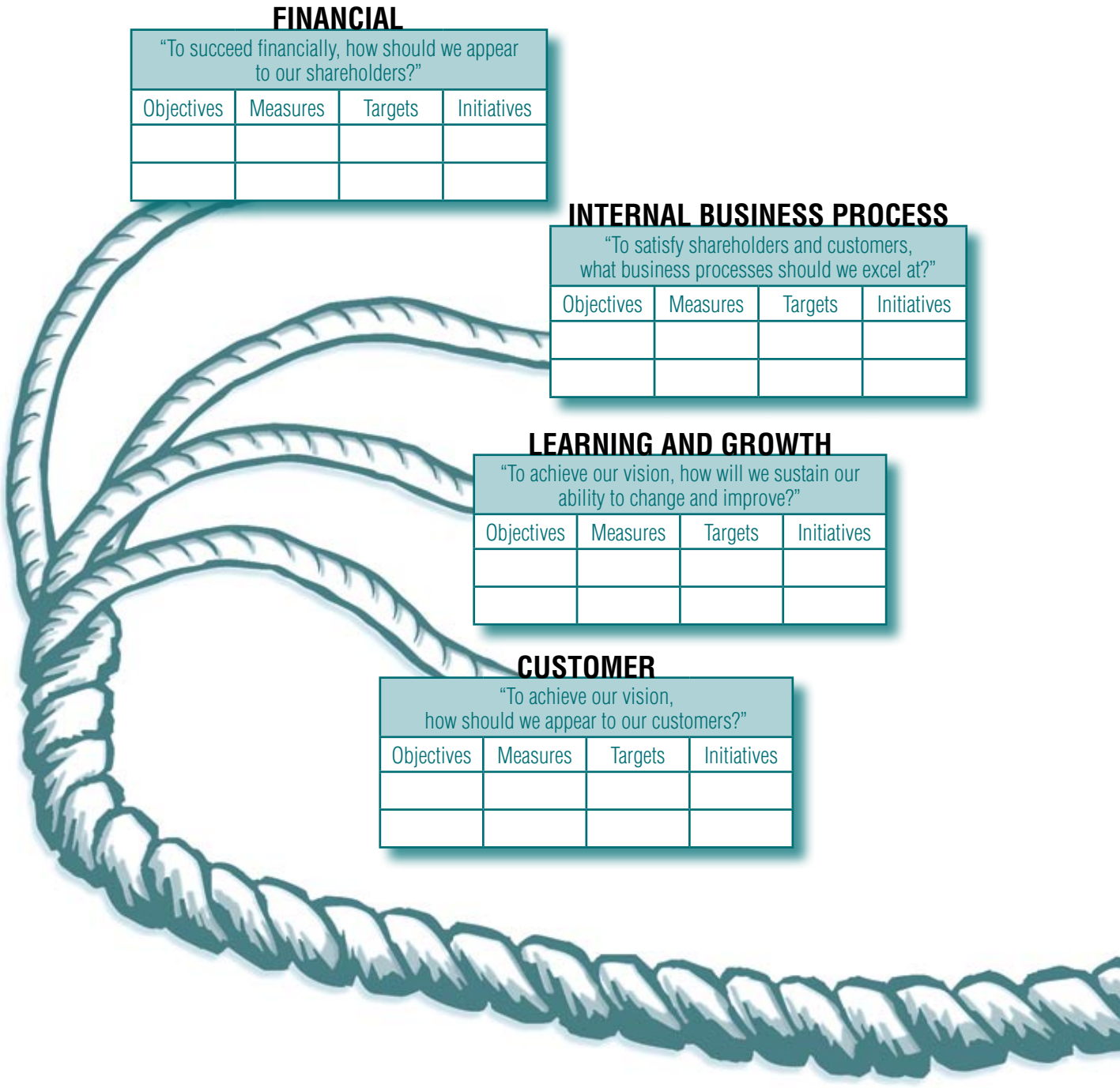
- **Financial**
  The financial perspective serves as a common endpoint for assessing organizational performance against a pre-determined budget. Financial metrics help organizations understand where and how revenue was generated by the business, identify the direct costs of operating the business, and support efforts that identify and reduce business risk. This perspective uses structured feedback to align financial performance with strategic goals.

- **Customer**
  The customer perspective focuses on external clients/users and markets. This perspective examines the company's value proposition in relation to market share, customer acquisition, satisfaction, and retention rates.

- **Internal Business Process**
  The internal business process perspective examines processes required to meet customer expectations and objectives of the organization. This perspective helps managers define the total value chain. A typical value chain begins with the process of innovation, ends with services offered to customers after a sale, and includes everything in between.

- **Learning and Growth**
  The learning and growth perspective examines the organization's investment in its people and their capabilities in order to ensure the long-term success of an organization. It examines the culture of the organization, its leadership, and methods for engaging employees.

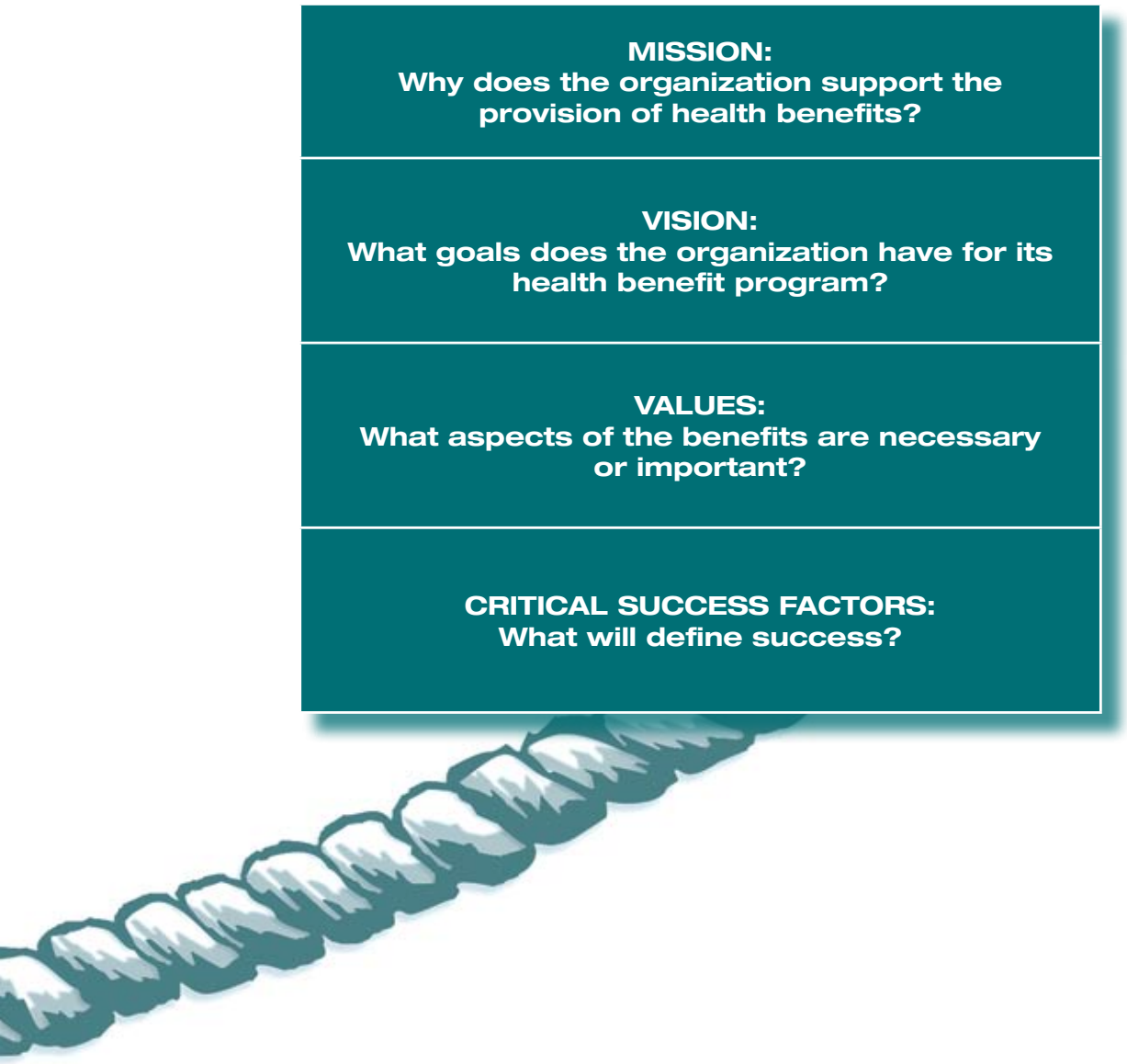
Figure 3A: Balanced Scorecard Model



Strategy Setting

The Balanced Scorecard Model can also be used to help leaders 'map' and implement organizational strategy.[7] Strategic mapping enables organizations to functionally describe strategy by outlining perspectives, their internal linkages, and opportunities for achieving business objectives. The process also allows organizations to describe the relationship between the development and execution of a business strategy. The outcomes of this process are captured in a **strategy map**. The strategy map that guided the development of the Plan Benefit Model is included below (Figure 3B).

Figure 3B: Health Strategy Map



Maternal and Child Health Scorecard

Many large companies already have a Balanced Scorecard for healthcare strategy setting or other purposes. A tailored maternal and child health scorecard can be added to an existing scorecard or it can function as a stand-alone set of metrics. Individual companies should review their own company's Balanced Scorecard when considering the key performance indicators described in this document.

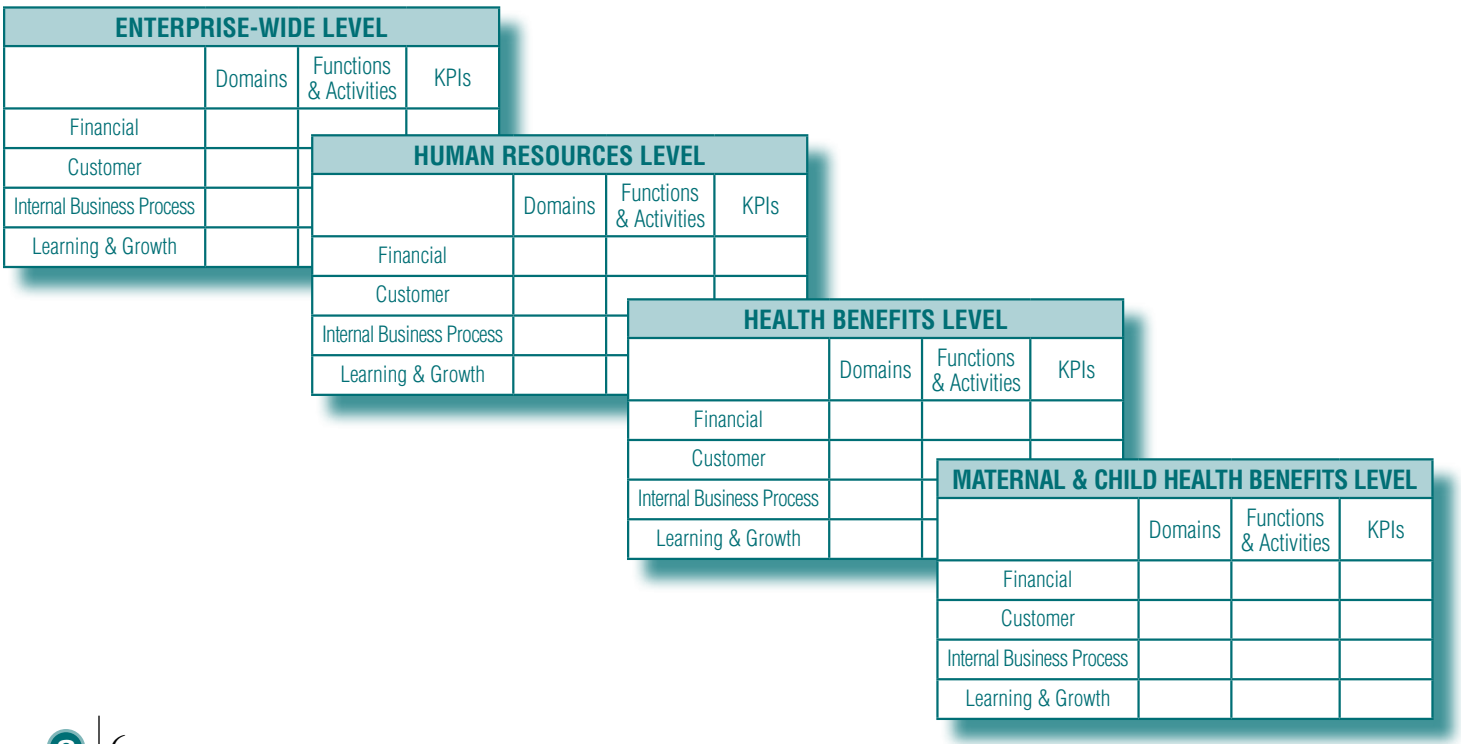
How the Health Scorecard is Organized

The Maternal and Child Health Scorecard supports the four perspectives found in Kaplan and Norton's model (Figure 3A).[7] However, certain perspectives have been tailored. For example, the Customer perspective has been modified to address the needs of internal and external stakeholders, since the broad function of human resources is designed to serve multiple types of customers. The Learning and Growth perspective has also been modified to reflect support for innovations in creating solutions for the target population.

Each perspective is organized into of a set of performance categories called domains. **Domains** represent a means for organizing similar attributes within a given perspective. They can also help link the organization's critical success factors with specific functions or activities.

Domains are divided into critical success factors, the primary descriptive references about the organization's goals. Critical success factors are operationalized through the use of **key performance indicators (KPI's)**. Key performance indicators are usually mission critical and address high-priority issues within a given domain. They have a desirable direction and are discriminating (small changes are meaningful), they are based on valid and available data, and they are also actionable.

Figure 3C: Cascading Balanced Scorecard



How the Health Scorecard can be Used

Employers and other interested parties should consider using the Balanced Scorecard framework to assess the performance of plan benefit provisions in relation to the health needs of childbearing-age women, pregnant women, children, and adolescents. Most Balanced Scorecards also include a combination of key performance indicators that address current business needs along with more strategic needs. This framework includes performance measures that address multiple time periods. Some activities generate immediate feedback, while other activities can only be monitored in increments of months or years.

Once a Balanced Scorecard infrastructure is operational, organizations can leverage the resulting data to better understand factors that influence outcomes and the linkages between multiple factors. This process will allow users to identify "cause-and-effect" relationships between specific factors within specific business processes. This allows organizations to identify opportunities to take corrective actions and improve performance.

Figure 3D: Maternal and Child Health Strategy Map

MISSION

- To support a healthy and productive workforce and community.

VISION STATEMENT

To optimize the quality and value of health care through:

- Early entrance and timely utilization of preconception, prenatal, and well-child care;
- Early detection and management of special health care needs and chronic diseases; and
- Balancing standardization with personal health care needs.

VALUE STATEMENTS

- An evidence-informed, standardized, equitable plan benefit design that is comprehensive and sustainable.
- Core components include prevention, early detection, and health promotion.
- Promotes high-quality, continuous care that is consistent with the medical home concept.
- Features culturally competent and family-centered care.
- Supports integration and collaboration among all stakeholders.
- Patient satisfaction and member engagement lead to informed decision-making.

CRITICAL SUCCESS FACTORS

- To align health and performance by:
  - Linking employee (and dependent) health to:
    - Customer data;
    - Production data; and
    - Employee satisfaction data.
- To emphasize employee health as a business investment by:
  - Linking employee (and dependent) health to:
    - Retention strategies;
    - Human capital capabilities assessments; and
    - Employee engagement and performance.
  - Facilitating positive interactions among all stakeholders by:
    - Investing in prevention; and
    - Emphasizing personal care models consistent with the medical home concept.

Maternal and Child Health Strategy Map

The Maternal and Child Health Balanced Scorecard (Figure 3E) was based on the Maternal and Child Health Strategy Map presented in Figure 3D. The scorecard includes four perspectives and eight domains. The domain categories establish a link between the organization's activities that support maternal and child health benefits and the outlined critical success factors.

Financial Perspective

Direct costs and indirect costs are the two domains used in the financial perspective. These costs provide the basis for assessing the financial impact of maternal and child health benefits. Direct costs explore the way in which the organization and the beneficiaries contribute to the overall cost of health benefits. Organizational expenses include administrative costs. Beneficiary costs are assessed using cost-sharing profiles and claim frequency. The indirect cost domain links to operations by examining the impact of maternal and child health on productivity, absenteeism, and disability. Together, these two domains provide a financial picture of how maternal and child health is impacting an organization. For example, an organization can use health scorecard metrics to examine the cost-offset relationship between the utilization of preventive services and treatment services.

Learning and Innovation Domains (Adapted from Learning and Growth)

This perspective consists of three domains: competency, change capacity, and culture/climate. A key organizational challenge confronting organizations is the way they leverage feedback to maintain and improve performance. These three domains attempt to organize and interpret feedback to improve organizational effectiveness.

- Competency explores the organization's commitment to understanding the target population's specific health needs, as well as the organization's strategy for supporting these needs.
- Change capacity examines the organization's ability to adapt its business practices to support identified maternal and child health needs. These business practices require creativity because they must also support overall business performance if the organization expects to be competitive.
- Culture/climate refers to issues of employee recruitment and retention. It measures the effect of maternal and child programs and benefits on the rate of return post-pregnancy, the impact of flexible work schedules, or how an organization supports families of children with special needs.

Stakeholder Perspective (Adapted from Customer Perspective)

The stakeholder perspective was developed to help an organization understand the various internal and external customers who supply, use, or are impacted by maternal and child health benefits. This perspective explores engagement: it examines an organization's approach to health education and employee communication, and considers staff and employee satisfaction with the Maternal and Child Health Plan Benefit Model (Plan Benefit Model) (presented in Part 2). The Business Group and the Benefits Advisory Board believe successful implementation of the Plan Benefit Model requires active participation by all stakeholders.

Operations Perspective (Adapted from Internal Business Process Perspective)

The operations perspective looks at the technical business processes that are required to implement maternal and child health benefits: operations management and customer management. The operations management domain covers a continuum of activities. These include plan design, eligibility requirements, the structure of the provider network, and coordination of utilization management and case management. Customer management looks at utilization rates of the various benefits along with the quality of care delivered by the system. These two domains provide a context for building and evaluating best practices and evidence-based care models.

Figure 3E: Example Maternal and Child Health Balanced Scorecard

PERSPECTIVE: FINANCIAL			
Domain	**Functions & Activities**	**Sample Performance Measure(s)**	**Sample Key Performance Indicators (KPIs)**
Direct Costs	Health plan cost management	Total health plan costs are competitive with market trends.	1. 0% net increase of MCH Plan Benefit Model costs over annual healthcare inflation rate.
		Reduction in health plan costs after introducing preventive care benefits.	2. 0% net increase in plan costs 1 year after adopting up to three MCH Plan Benefit Model preventive services.
			3. X% increase (over baseline) in preventive service claim costs. *Proxy for utilization.*
		Decrease cost for select categories of care, overall and by age group.	4. X% decrease (from baseline) in health plan costs for dependent children under age 21 years.
	Health plan cost-sharing	Stabilize or decrease cost-sharing.	5. Rate of increase for beneficiary out-of-pocket costs is less than the rate of change in the annual healthcare inflation rate.
	Health plan claim frequency	Increase the number / type of select medical claims, overall and by age group. Proxy for essential services (e.g., immunizations).	6. X% increase (over baseline) in health plan claims for dependent children under age 21.
			7. X% decrease (from baseline) in rate of prematurity, costs for multiple births or high-risk births.
Indirect Costs	Productivity	Decrease child sick days.	8. Average child attendance rate in employer-sponsored child-care programs is 90% or higher. *Proxy for child sick days.*
	Absenteeism	Decrease maternity-related complications.	9. X% decrease (from baseline) in the amount of lost work time associated with pregnancy-related complications.
		Decrease the prevalence, severity, and/or duration of child illness.	10. Decrease the number of unscheduled absences for dependent illness by X% (from baseline).
	Disability	Decrease pregnancy-related disability claims.	11. X% decrease (from baseline) in the duration of long-term disability claims for pregnancy-related complications.

PERSPECTIVE: LEARNING/INNOVATION			
Domain	**Functions & Activities**	**Sample Performance Measure(s)**	**Sample Key Performance Indicators (KPIs)**
Change capacity		Implement family-friendly business practices.	12. X% increase (from baseline) in number of available family-friendly work/life benefits (e.g., flex time, flex benefits, paid FMLA, PTO pool).
Competency	Human capital capabilities	Regularly perform employee needs assessments.	13. Employee needs assessments inquire about child and adolescent beneficiaries' health promotion, disease prevention, or medical care needs.
Culture/ climate	Recruitment / retention	Increase retention rate post-pregnancy.	14. X% increase in post-pregnancy employee return rate over baseline.
		Provide paid leave for caregiving.	15. X% increase (from baseline) in eligible employees who participate in paid leave programs.
		Increase use of home visits post-delivery.	16. X% increase (from baseline) in the number of home health visits post-delivery.
		Offer flexible work schedules.	17. X% increase (from baseline) in the number of parents participating in flexible work programs.

PERSPECTIVE: STAKEHOLDERS			
Engagement	Health education	Pregnancy management / education programs.	18. X% increase (from baseline) in number of participants / attendance rate in pregnancy education programs.
		Child-focused or family health-related education programs	19. Add at least one family-centered education program or reconfigure an existing health promotion / wellness program to be inclusive of children's health needs.
	Communications	Increase outreach efforts to employees and dependents.	20. Increase number (from baseline) of preventive service health communication campaigns or outreach programs.
		Increase employee and dependent access to plan benefit educational materials.	21. One new form of plan benefit communication is introduced each year.
		Reduce language and cultural barriers between health plan and employees / dependents.	22. Produce plan communications, if applicable, in at least one additional language each year.
		Reduce barriers to enrollment and utilization caused by low health literacy issues.	23. 100% of plan communications are written at the 5th grade reading level.
	Satisfaction	Increase satisfaction with plan administration among benefits staff.	24. Staff satisfaction survey results of plan administrator are equal to or better than prior year.
		Increase plan satisfaction among plan participants / beneficiaries.	25. Member satisfaction survey results of plan administrator are equal to or better than prior year.

PERSPECTIVE: OPERATIONS			
Domain	**Functions & Activities**	**Sample Performance Measure(s)**	**Sample Key Performance Indicators (KPIs)**
Operations Management	Eligibility	Increase member coverage rate.	26. X% increase (from baseline) in annual enrollment (or evidence of coverage) by children and adolescents up to age 21 years.
	Plan design	Align plan coverage with the Plan Benefit Model.	27. X% decrease (from baseline) in coverage gaps for preventive services (show results by type of service).
	Utilization management	Adopt evidence-based care management where available.	28. X% increase (from baseline) in plan benefits reflecting evidence-based care management practices.
			29. X% increase (from baseline) in vaginal birth after cesarean (VBAC) rate.
			30. X% increase (from baseline) in the number of common metrics reported annually by each health plan.
	Information management	Standardize reporting across all plan administrators.	31 X% of members will receive an annual report detailing 100% of aggregated member out-of-pocket expenses.
			32. X% increase (from baseline) in annual number of cases or new contacts over baseline.
	Case management	Increase outreach.	33. X% increase (from baseline) in the number of case management encounters.
			34. X% increase (from baseline) in the number of primary care services delivered in a medical home.
	Provider networks	Improve network quality.	35. X% increase (from baseline) in the proportion of beneficiaries who have a medical home or, as a proxy, have selected a primary care provider and have visited that provider at least once in the past year.
			36. Increase the number of pediatric specialists and sub-specialists over baseline.
		Improve network diversity.	37. X% of provider network reflects member diversity according to race, gender, and primary language.
		Improve network comprehensiveness.	38. X% of Y providers maintain Z license or relevant board certification.
		Improve provider competence.	39. X% increase (from baseline) in number of children with asthma who are on controller medications.
Customer Management	Quality of care	Improve clinical outcomes.	40. X% decrease (from baseline) in number of children who have an ER admissions related to asthma symptoms.
			41. X% reduction (from baseline) in adverse reactions to medications and / or hospital-borne infections.
			42. Net decrease in number of negative health behaviors from baseline (e.g., prevent overweight children from becoming obese, reduce number of new teen smokers, etc).
	Health promotion	Protect and promote health	43. Reduce the number of dependent beneficiaries who experience preventable health problems by X% from baseline (e.g., influenza, chickenpox, injuries).
	Utilization rates	Increase utilization of preventive services.	44. Increase number of preventive services by X% (from baseline) (sub-goal may target specific services).
			45. X% increase in the number of children aged x-x who are up-to-date on all recommended immunizations.

Summary Points

- Significant inconsistencies exist in the design, administration, and evaluation of maternal and child health plan benefits. These inconsistencies suggest employers are not maximizing their investment in health benefits.
- Employers may be able to improve their return on investment in health benefits by improving the alignment between health benefits, organizational strategy, and internal operations.
- The Balanced Scorecard methodology is one approach shown to be effective in helping companies achieve strategic/operational alignment. The Balanced Scorecard can also help companies evaluate their current health benefits and make informed choices about which Plan Benefit Model recommendations to adopt. Business leaders can also use the Balanced Scorecard Model to 'map' and implement organizational strategy.

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Maternal and Child Health (MCH) Plan Benefit Model Side-by-Side Analysis Tool Summary

Employers frequently initiate baseline comparison exercises in order to assess their relative position in the marketplace. This process is commonly known as benchmarking. These comparisons can support a variety of internal and external activities, including health plan benefit design. The goal of comparison is to identify where an employer is under- or over-performing relative to a peer group or best practice. Employers can compare their types of coverage, specific benefit coverage levels, cost-sharing models, or even covered provider types to an industry standard or evidence-based model. Comparison activities also provide information that can support specific business or human capital goals contained in a company's Balanced Scorecard.

The Business Group has developed a side-by-side analysis tool that employers and healthcare consultants can use to compare specific attributes of an existing health plan to the Business Group's proposed Maternal and Child Health Plan Benefit Model (Plan Benefit Model). Upon completion of this exercise, the user should be able to quantify the similarities and amount of variance between an existing plan and the Plan Benefit Model. These identified differences can help employers, consultants, and others identify benefit re-design opportunities and health scorecard metrics, and also facilitate negotiations with plan administrators, unions, and others.

In order to complete the side-by-side comparison, follow these steps:

1. Gather documentation for the plan that you would like to compare to the Plan Benefit Model. This could be a summary plan description (SPD) or a health plan contract. In either case, the documentation should include information on coverage levels, cost-sharing, and provider network details.
2. Insert relevant information from the existing plan into column C labeled "Comparison Plan."
3. Briefly summarize the key differences between the Plan Benefit Model and the existing plan. Insert this information in column D labeled "Variance Summary."
4. Analyze the variance summary in the context of your company's healthcare strategy, and select key areas for improvement. Discuss these areas with your company's consultants and plan administrators.

An electronic copy of the side-by-side comparison tool is available online at:
www.businessgrouphealth.org/healthtopics/maternalchild/investing

Side-by-Side Analysis Tool

Plan Benefit Model Components	HMO & PPO Models	Comparison Plan	Variance Summary	Key Opportunities for Improvement
General Provisions				
Deductible	Does Not Apply - No Plan Deductible			
Out-of-Pocket Maximum	Individual - $1,500; Individual + one (2) - $3,000; Family (3+) - $4,500			
I. PREVENTIVE SERVICES				
Ia. Well-Child Services				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction of a primary care provider.			
Coverage Limits	26 visits between birth and 21 years of age.			
Inclusions	All necessary medical care.			
Exclusions	All others as defined by the health plan.			
Copay	0			
Coinsurance	0%			
OOP Maximum	N/A			
Ib. Immunizations				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction of a primary care provider, certified nurse midwife, OB-GYN, or other qualified provider.			
Coverage Limits	No limits for ages 0-21, or for pregnancy.			
Inclusions	ACIP recommended routine and high-risk immunizations; travel immunizations.			
Exclusions	All others as defined by the health plan.			
Copay	0 (routine and high-risk) / 1 (travel)			
Coinsurance	0% (routine and high-risk) / 10% (travel)			
OOP Maximum	N/A			
Ic. Preventive Dental Services				
Coverage (Y/N)	Y			
Covered Providers	Licensed dentist or licensed dental hygienist who is overseen by a dentist or primary care provider (limited services).			
Coverage Limits	One preventive visit during the first 12 months of life; 2 visits per calendar year for all beneficiaries aged 2-21 years; 1 visit during the preconception period and 1 during pregnancy for all women.			
Inclusions	Prophylaxis, sealants, space maintainer, bitewing x-rays, complete series x-rays, periapical x-rays, routine oral evaluations, fluoride varnish or gel applications, fluoride supplementation.			
Exclusions	All others as defined by the health plan.			
Copay	0			

Plan Benefit Model Components	HMO & PPO Models	Comparison Plan	Variance Summary	Key Opportunities for Improvement
Coinsurance	0%			
OOP Maximum	N/A			
Id. Early Intervention Services for Mental Health / Substance Abuse				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction of a primary care provider or a mental health professional.			
Coverage Limits	8 visits per calendar year for the monitoring and treatment of DSM-IV V-code conditions			
Inclusions	Screening (including family psychosocial screening), monitoring, and treatment of DSM-IV: V codes only.			
Exclusions	All others as defined by the health plan.			
Copay	0			
Coinsurance	0%			
OOP Maximum	N/A			
Ie. Preventive Vision Services				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction of a primary care provider.			
Coverage Limits	2 visits outside of regular well-child care between birth and age 5.			
Inclusions	Screening to detect amblyopia, strabismus, and defects in visual acuity in children younger than age 5 years. Exams include: visual acuity tests, stereopsis, vision history, external eye inspection, ophthalmoscopic examination, tests for ocular muscle motility and eye muscle imbalances, monocular distance acuity.			
Exclusions	All others as defined by the health plan.			
Copay	0			
Coinsurance	0%			
OOP Maximum	Does not apply			
If. Preventive Audiology Screening Services				
Coverage (Y/N)	Y			
Covered Providers	Primary care provider or covered specialist (audiologist or speech pathologist).			
Coverage Limits	3 visits - birth to age 19			
Inclusions	All necessary preventive care.			
Exclusions	All others as defined by the health plan.			
Copay	0			
Coinsurance	0%			
OOP Maximum	N/A			
Ig. Unintended Pregnancy Prevention Services				
Coverage (Y/N)	Y			

Plan Benefit Model Components	HMO & PPO Models	Comparison Plan	Variance Summary	Key Opportunities for Improvement
Covered Providers	By or under the direction of a primary care provider.			
Coverage Limits	No limits on counseling services when provided by an approved primary care provider; no limits on medications, procedures, or devices as prescribed by a qualified provider.			
Inclusions	All FDA-approved prescription contraceptive methods (e.g., pills, patches, IUDs, diaphragms, vaginal rings), and voluntary sterilization (e.g., tubal ligation, vasectomy); abortion and all related services; medically appropriate laboratory examinations and tests; counseling services and patient education.			
Exclusions	All others as defined by the health plan.			
Copay	0			
Coinsurance	0%			
OOP Maximum	N/A			
Ih. Preventive Preconception Care				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction of a primary care provider, a certified nurse midwife, or an OB-GYN.			
Coverage Limits	Two preconception care visits per calendar year.			
Inclusions	All medically necessary care.			
Exclusions	All others as defined by the health plan.			
Copay	0			
Coinsurance	0%			
OOP Maximum	N/A			
Ii. Preventive Prenatal Care				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction of a primary care provider, a certified nurse midwife, or an OB-GYN.			
Coverage Limits	Up to 20 prenatal care visits; 1 prenatal pediatric prenatal visit.			
Inclusions	All medically necessary care.			
Exclusions	All others as defined by the health plan.			
Copay	0			
Coinsurance	0%			
OOP Maximum	N/A			
Ij. Preventive Postpartum Care				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction of a primary care provider, a certified nurse midwife, or an OB-GYN; credentialed lactation consultants.			
Coverage Limits	One postpartum care visit per pregnancy; 5 lactation consultation visits per pregnancy.			

Plan Benefit Model Components	HMO & PPO Models	Comparison Plan	Variance Summary	Key Opportunities for Improvement
Inclusions	All medically necessary care.			
Exclusions	All others as defined by the health plan.			
Copay	0			
Coinsurance	0%			
OOP Maximum	N/A			
Ik. Preventive Screening Services (General)				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction a primary care provider.			
Coverage Limits	Coverage for preventive services not included in regular: • Well-child care • Preventive preconception, prenatal, or post-partum care. Frequency as defined by the U.S. Preventive Services Task Force or other cited reference.			
Inclusions	Reference plan benefit list.			
Exclusions	All others as defined by the health plan.			
Copay	0			
Coinsurance	0%			
OOP Maximum	N/A			
II. Recommended Levels of Care for Physician/Practitioner Services				
IIa. Primary Care Provider				
Coverage (Y/N)	Y			
Covered Providers	Family physician, general practitioner, internal medicine physician, pediatrician; a medical professional who operates under a physician (e.g., nurse practitioner, physician's assistant); or a specialist physician or medical professional who is licensed to provide primary care services (e.g., certified nurse midwife, OB-GYN).			
Coverage Limits	No limits			
Inclusions	All medically necessary care.			
Exclusions	N/A			
Copay	$10 - $20 per visit			
Coinsurance	10% per visit			
OOP Maximum	Applies			
IIb. Mental Health / Substance Abuse Provider				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction of a primary care provider or mental health professional (psychiatrist, clinical psychologist, clinical social workers, psychiatric nurse specialist, licensed professional counselor).			

Plan Benefit Model Components	HMO & PPO Models	Comparison Plan	Variance Summary	Key Opportunities for Improvement
Coverage Limits	No limits for DSM-IV diagnoses.			
Inclusions	All medically necessary care.			
Exclusions	V-codes as described in the DSM-IV.			
Copay	$10 - $20 per visit			
Coinsurance	10% per visit			
OOP Maximum	Applies			
IIc. Specialty Provider or Surgeon				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction of a physician trained in a specialty area.			
Coverage Limits	No limits			
Inclusions	All medically necessary care.			
Exclusions	N/A			
Copay	$10 - $20 per visit (if referred by primary care provider for a chronic condition), otherwise $25 - $40			
Coinsurance	10% or 15%			
OOP Maximum	Applies			
IId. E-Visits and Telephonic Visits				
Coverage (Y/N)	Y			
Covered Providers	By a physician, a medical professional who operates under a physician, or a medical professional who is licensed to provide primary care services.			
Coverage Limits	See plan details.			
Inclusions	All medically necessary care.			
Exclusions	Scheduling, appointment reminders and courtesy calls, communication resulting in an office visit within the subsequent 24 hours, all others as defined by the health plan.			
Copay	To be determined by the health plan.			
Coinsurance	To be determined by the health plan.			
OOP Maximum	Applies			
III. Emergency Care, Hospitalization, and Other Facility-Based Care				
IIIa. Emergency Room and Urgent Care Services				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction of a physician in a hospital emergency department or urgent care center.			
Coverage Limits	No limits			
Inclusions	All medically necessary care.			

Plan Benefit Model Components	HMO & PPO Models	Comparison Plan	Variance Summary	Key Opportunities for Improvement
Exclusions	Elective care or non-emergency care and follow-up care recommended by non-plan providers that has not been approved by the plan or provided by plan providers; emergency care provided outside the service area if the need for care could have been foreseen before leaving the service area; medical and hospital costs resulting from a normal full-term delivery of a baby outside the service area.			
Copay	$45 - $60 (Emergency); $100+ (Non-Emergency) per visit; $25-$40 (Urgent care)			
Coinsurance	20% or 25%+ per visit; 10% (Urgent care)			
OOP Maximum	Applies			
IIIb. Inpatient Substance Abuse Detoxification				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction of a psychiatrist, addicionist, or primary care provider.			
Coverage Limits	No limits. Requires pre-certification.			
Inclusions	All medically necessary care.			
Exclusions	All other care as defined by the health plan.			
Copay	$75 - $100 per episode			
Coinsurance	25% per episode (one-time coinsurance based on negotiated rate)			
OOP Maximum	Applies			
IIIc. Inpatient Hospital Service: General Inpatient/Residential Care				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction of a physician, dentist, mental health professional, or other qualified provider.			
Coverage Limits	Admissions may require pre-certification. Periodic recertification of a beneficiary's continued need for care may be required as well. Mental health admissions require a DSM-IV diagnosis. No other limits.			
Inclusions	All medically necessary care.			
Exclusions	All others as defined by the health plan.			
Copay	$75 - $100 per episode			
Coinsurance	25% per episode (one-time coinsurance based on negotiated rate)			
OOP Maximum	Applies			
IIId. Labor / Delivery				
Coverage (Y/N)	Y			
Covered Providers	Primary care physician (family physician, general practitioner, internal medicine physician), nurse practitioner, or a medical professional who is licensed to provide pregnancy-related primary care services (e.g., certified nurse midwife, OB-GYN).			

Plan Benefit Model Components	HMO & PPO Models	Comparison Plan	Variance Summary	Key Opportunities for Improvement
Coverage Limits	2+ days: vaginal delivery (pending risk level), 4+ days: cesarean delivery, excluding the day of delivery (pending risk level).			
Inclusions	All medically necessary care.			
Exclusions	All others as defined by the health plan.			
Copay	$75 - $100 per episode			
Coinsurance	25% per episode (one-time coinsurance based on negotiated rate)			
OOP Maximum	Applies			
IIIe. Ambulatory Surgical Facility or Outpatient Hospital Services				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction of a physician or other qualified provider.			
Coverage Limits	Some services may require pre-certification. No other limits.			
Inclusions	All medically necessary care.			
Exclusions	All others as defined by the health plan.			
Copay	$45 - $60 per visit			
Coinsurance	20% per visit			
OOP Maximum	Applies			
IIIf. Mental Health / Substance Abuse Partial Day Hospitalization (Day Treatment) or Intensive Outpatient Services				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction of a physician or mental health professional, or other qualified provider.			
Coverage Limits	Mental health admissions require a DSM-IV diagnosis. Requires pre-certification. Partial hospital programs must include a minimum of 3 hours of clinical services per day, 5 days per week. No other limits.			
Inclusions	All medically necessary care.			
Exclusions	All others as defined by the health plan.			
Copay	$45 - $60 per episode			
Coinsurance	20% per episode (one-time coinsurance based on negotiated rate)			
OOP Maximum	Applies			
IV. Therapeutic Services / Ancillary Services				
IVa. Prescription Drugs				
Coverage (Y/N)	Y			
Covered Providers	Medications may only be dispensed by a state-licensed pharmacist, physician, or provider under the direction of a physician.			
Coverage Limits	No limits			

Plan Benefit Model Components	HMO & PPO Models	Comparison Plan	Variance Summary	Key Opportunities for Improvement
Inclusions	All medically necessary care.			
Exclusions	All others as defined by the health plan.			
Copay	$0 – $100 per fill/refill			
Coinsurance	0% - 25% per fill/refill			
OOP Maximum	Applies			
IVb. Dental Services				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction of a licensed dentist or licensed dental hygienist.			
Coverage Limits	Annual monetary limit: $5,000 per person.			
Inclusions	All medically necessary care. Coverage also includes: amalgam and resin-based composite restorations ("fillings"); extractions (oral surgery) such as simple, surgical, soft tissue and bony impacted teeth; general anesthesia and intravenous sedation; occlusal guards (for bruxism only); crowns; osseous surgery ("periodontics"); implants; prosthetics; and endodontic procedures.			
Exclusions	Non-medically necessary orthodontics; dental treatment for cosmetic purposes; all others as defined by the health plan.			
Copay	$25 - $40 per visit			
Coinsurance	15% per visit			
OOP Maximum	Applies			
IVc. Vision Services				
Coverage (Y/N)	Y			
Covered Providers	Ophthalmologist or optometrist.			
Coverage Limits	Refractive exams (limit 1 per calendar year), treatment of eye diseases and injury, replacement lenses and frames or contact lenses every year or each time prescription changes.			
Inclusions	Corrective eyeglasses and frames or contact lenses; fitting of contact lenses; eye exercises/ vision therapy and other low vision aids.			
Exclusions	All others as defined by the health plan.			
Copay	$25 - $40 per visit. No copayment on glasses or contacts purchase. Monetary limit on glasses and contacts: $200 per calendar year.			
Coinsurance	15% per visit. No copayment on glasses or contacts purchase.			
OOP Maximum	Applies			
IVd. Audiology Services				
Coverage (Y/N)	Y			
Covered Providers	Licensed and/or board certified audiologist or speech-language pathologist.			

Plan Benefit Model Components	HMO & PPO Models	Comparison Plan	Variance Summary	Key Opportunities for Improvement
Coverage Limits	No limits			
Inclusions	All medically necessary assessment and treatment.			
Exclusions	All others as defined by the health plan.			
Copay	$25 - $40 per visit			
Coinsurance	15% per visit			
OOP Maximum	Applies			
IVe. Nutritional Services				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction of a physician, nurse practitioner, or other licensed provider working under the direction a physician; registered dietician.			
Coverage Limits	Limited to 25 visits per calendar year.			
Inclusions	All medically necessary care.			
Exclusions	All others as defined by the health plan.			
Copay	$25 - $40 per visit			
Coinsurance	15% per visit			
OOP Maximum	Applies			
IVf. Occupational, Physical, and Speech Therapy Services				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction of a primary care provider, a licensed occupational therapist, physical therapist, speech pathologist, or speech therapist.			
Coverage Limits	75 services per calendar year			
Inclusions	All medically necessary care.			
Exclusions	All others as defined by the health plan.			
Copay	$25 - $40 per visit			
Coinsurance	15% per visit			
OOP Maximum	Applies			
IVg. Infertility Services				
Coverage (Y/N)	Y			
Covered Providers	By or under the direction of a primary care provider (family physician, general practitioner, internal medicine physician, nurse practitioner) or qualified physician specialist (e.g., OB-GYN, fertility specialist).			
Coverage Limits	Medications are subject to formulary require-ments.			

Plan Benefit Model Components	HMO & PPO Models	Comparison Plan	Variance Summary	Key Opportunities for Improvement
Inclusions	Medically appropriate laboratory examinations and tests; counseling services and patient education; examination and treatment; testing for diagnosis and surgical treatment of the underlying cause of infertility; fertility drugs (oral and injectable); artificial insemination (intravaginal insemination [IVI], intracervical insemination [ICI], intrauterine insemination [IUI]).			
Exclusions	Assisted reproductive technology (ART) procedures, such as: in vitro fertilization, embryo transfer including, but not limited to, gamete GIFT and zygote ZIFT; and ovulation induction. Services and supplies related to the aforementioned services. Reversal of voluntary, surgically-induced sterility. Treatment for infertility when the cause of the infertility was a previous sterilization with or without surgical reversal. Infertility treatment of any type when the FSH level is 19 mIU/ml or greater on day 3 of a menstrual cycle. Sperm processing; the purchase, freezing, and storage of donor sperm and donor eggs. All others as defined by the health plan.			
Copay	$100+ per visit			
Coinsurance	25%+ per visit			
OOP Maximum	Does not apply			
IVh. Home Health Services				
Coverage (Y/N)	Y			
Covered Providers	Reference plan benefit list.			
Coverage Limits	No limits			
Inclusions	All medically necessary care. Coverage also includes: respite care including respite inpatient stays when there are no available qualified home health professionals within the geographic area; hospice and palliative care services; early intervention services as prescribed by a physician; medical daycare; oxygen therapy; intravenous therapy; medications; and nutritional services.			
Exclusions	Nursing care requested by, or for the convenience of, the patient or the patient's family; transportation; home care primarily for personal assistance that does not include a medical component and is not diagnostic, therapeutic, or rehabilitative; services provided by a family member or resident in the beneficiary's home; services rendered at any site other than the beneficiary's home.			
Copay	$10 - $20 per visit			
Coinsurance	10% per visit			
OOP Maximum	Applies			

Plan Benefit Model Components	HMO & PPO Models	Comparison Plan	Variance Summary	Key Opportunities for Improvement
IVi. Hospice Care				
Coverage (Y/N)	Y			
Covered Providers	Licensed and or accredited hospice			
Coverage Limits	8 months of coverage for patients with terminal illnesses			
Inclusions	Prescribed physician visits, nursing care, home health aides, medical social services, physical therapy, services of home health aides, medical appliances and supplies including durable medical equipment rental, prescription drugs, bereavement services, continuous care during crisis periods.			
Exclusions	All others as defined by the health plan.			
Copay	$100+ one time			
Coinsurance	25%+ per episode (one time coinsurance based on negoiated rate).			
OOP Maximum	Applies			
IVj. Durable Medical Equipment (DME), Supplies & Medical Foods				
Coverage (Y/N)	Y			
Covered Providers	N/A			
Coverage Limits	$25,000 annual limit per person.			
Inclusions	Covers the rental or purchase, at the plan's option, and the repair and adjustment, of durable medical equipment; covers food and formula for special dietary use of accepted medical benefit to cover nutritional support costs over and above usual foods; covers banked human milk, including processing and shipping fees. Refer to Plan Benefit list for details.			
Exclusions	Refer to Plan Benefit list for details.			
Copay	10% per unit			
Coinsurance	10% per unit			
OOP Maximum	Applies			
IVk. Transportation Services				
Coverage (Y/N)	Y			
Covered Providers	N/A			
Coverage Limits	Reference plan benefit list.			
Inclusions	Transportation for ground, air, or watercraft when medically appropriate, and when: associated with covered hospital inpatient care; related to a medical emergency; or associated with covered hospice care.			
Exclusions	Ambulance transportation to receive non-emergent outpatient or inpatient services; "ambulette" / "cabulance" service; air ambulance without prior approval.			

Plan Benefit Model Components	HMO & PPO Models	Comparison Plan	Variance Summary	Key Opportunities for Improvement
Copay	$45 - $60 (Emergency); $100+ (Non-Emergency) per use.			
Coinsurance	15% or 25%+ per use			
OOP Maximum	Applies			
V. Laboratory, Diagnostic, Assessment, and Testing Services				
Va. Laboratory Services				
Coverage (Y/N)	Y			
Covered Providers	Inpatient hospital, outpatient hospital, clinic and provider office.			
Coverage Limits	No limit			
Inclusions	All medically necessary care.			
Exclusions	All others as defined by the health plan.			
Copay	$0 - $100+			
Coinsurance	10% - 25%			
OOP Maximum	Applies			
Vb. Diagnostic, Assessment, and Testing (Medical and Psychological) Services				
Coverage (Y/N)	Y			
Covered Providers	Reference Plan Benefit list.			
Coverage Limits	No limits. Some services may require pre-authorization.			
Inclusions	All medically necessary diagnostic and assessment tests provided or ordered and billed by a physician			
Exclusions	All others as defined by the health plan.			
Copay	$0 - $100+			
Coinsurance	10% - 25%			
OOP Maximum	Applies			

4 Healthy Pregnancy and Healthy Children: Opportunities and Challenges for Employers

- The costs and complications of pregnancy.
- Strategies to improve the health of women before, during, and after pregnancy.
- Key health issues for children and adolescents, information on the economic burdens of child illness and injury, and important prevention opportunities.
- Strategies for assisting children with special health care needs.
- The importance of investing in primary care and medical homes.
- Employer case-studies.

4 Healthy Pregnancy and Healthy Children: Opportunities and Challenges for Employers

The Business Case for Promoting Healthy Pregnancy

This issue brief provides an overview of the costs and complications of pregnancy. It also presents opportunities employers have to improve the health of their beneficiaries and reduce healthcare costs through the implementation of pregnancy-tailored benefits, programs, and policies.

Introduction

Approximately, 6 million women become pregnant each year[1] and most are beneficiaries of employer-sponsored health plans. In 2005, 63% of all women in the United States were covered by job-based health coverage, either through their own employer or their spouse's employer.[2] In the past 20 years, the percentage of new mothers in the workforce has increased by more than 80%. Currently, 56.4% of women who have an infant younger than 1 year of age are employed outside the home[3] and new mothers are the fastest growing segment of the U.S. workforce.[4] One-third of working mothers return to work within 3 months of the birth of their child and two-thirds return to work within 6 months.[5]

Employers incur the high costs of pregnancy-related healthcare. Pregnancy and **neonatal** claims are often employers' highest ticket items.[6] Increased utilization of high-cost diagnostics, increases in preterm births, multifetal pregnancies, and high rates of cesarean sections are making employers aware of the need to focus on **pregnancy-related costs**.[7] Beyond the direct medical costs of pregnancy, employers contend with issues of absenteeism, short- and long-term disability, and the loss of institutional knowledge due to retention problems following pregnancy.

Savvy benefit managers are educating themselves on the special medical needs of pregnant women and are improving the health of women before, during, and after pregnancy through comprehensive preconception, prenatal, and postpartum benefits; healthy pregnancy programs; and health promoting policies. Smart programs tailored to the needs of pregnant women are hitting the mark.

The following sections provide the evidence and rationale for promoting health at each stage of pregnancy, and present opportunities employers have to improve the health of their beneficiaries and reduce healthcare costs.

Key Definitions[8]:

Preconception: Occurring prior to conception.
Prenatal: Occurring, existing, performed, or used before birth.
Antenatal: A synonym for prenatal.
Perinatal: Occurring in, concerned with, or being in the period around the time of birth.
Postnatal: Occurring or being after birth.

The Value of a Healthy Pregnancy

Preconception Period

The **preconception period** is the 1-year period before a woman becomes pregnant. Preconception health is important because the health of a woman's body *before* pregnancy affects the viability of the pregnancy and the health of the future infant. Preconception health care is preventive care; it includes appropriate vaccinations, adequate exercise, disease management, and enriched

Health care during the preconception period focuses on nutrition, immunizations, and the effective management of existing chronic diseases.

nutrition.[9] Good preconception health reduces pregnancy complications, birth defects, long-term developmental issues, and speeds postpartum recovery.[9] Preconception care is also **cost-saving**. A recent prospective analysis of comprehensive preconception care found that every for every $1 spent on preconception care, $1.60 is saved in maternal and fetal care costs.[10] Other studies have shown that preconception care can save as much as $5.19 for every $1 invested. Cost-savings mainly result from the reduced rate of **neonatal intensive care unit (NICU)** hospitalizations among infants born to mothers who received preconception care.[10]

The physical health of both the woman and the man *before* pregnancy affect the health of their future baby. There are specific things women can do to improve their chances of a healthy pregnancy.

What women can do[12]:

- Take a multivitamin with 400 micrograms (mcg) of folic acid every day before pregnancy.
- Get a pre-pregnancy checkup, including a dental checkup.
- Eat healthy food, maintain a healthy weight, and stay fit.
- Stop smoking and avoid secondhand smoke.
- Stop drinking alcohol.
- Not use illegal drugs.
- Avoid infections.
- Avoid hazardous substances and chemicals.
- Talk to a healthcare provider about their family history (including history of birth defects).
- Avoid stress.

The challenge in providing health care for the preconception woman lies in accurately identifying the preconception period. Only 51% of pregnancies are intended; thus, half of women do not have the opportunity to get recommended preconception care before they conceive.[9] Approximately 40% of unintended pregnancies—pregnancies either mistimed or unwanted—are carried to term.[11] Since intention does not always precede pregnancy, all women of **childbearing-age** (women aged 15 to 44 years) are considered to be in the preconception period.

Pregnancy

Broken into three trimesters, a normal pregnancy lasts between 38 and 42 weeks from the woman's last menstrual period. Pregnant women are advised to seek prenatal care; eat a healthy diet, get regular exercise and maintain a healthy weight; avoid tobacco, alcohol, and environmental toxins; and reduce stress.[9, 12, 13] Although some pregnancy complications are genetic, many common problems are preventable. Pregnant women can lower their risk of complications if they adhere to healthy pregnancy guidelines.

Healthy Pregnancy Essentials

Eliminate
- Alcohol and drug use
- Tobacco use

Prevent
- Infectious diseases
- Accidents
- Domestic violence

Manage/ Address
- Weight gain
- Stress
- Mental health problems

Improve
- Nutrition
- Physical activity

Prenatal Care

Prenatal care includes preventive screening and counseling; diagnostic testing and procedures; and growth and weight monitoring. Evidence shows that comprehensive prenatal care is associated with reduced incidence of low birthweight and infant mortality. Death rates from pregnancy complications are three to four times higher among women who receive no prenatal care compared to women who receive basic prenatal care.[14] For women at high risk of pregnancy complications, prenatal care is both live-saving and cost-saving. For every dollar spent on prenatal care, employers can expect savings of $3.33 for postnatal care and $4.63 in long-term morbidity costs.[15]

Pregnancy Complications

There is a wide variety of pregnancy complications. Some complications are acute and limited (e.g., influenza, infection with listeria): they affect the health of the woman and the viability of her pregnancy, but long-term effects are mild or rare. Other complications, such as gestational diabetes, have both immediate and long-term risks. These risks can affect the pregnant woman and her future health, or the short- and long-term health of her baby. From both the health perspective and the cost perspective, complications that result in short- *and* long-term problems for *both* woman and child are the most concerning.

Pregnancy Complications[16]

- Alcohol use
- Bleeding disorders
- Drug use
- Ectopic pregnancy
- Gestational diabetes
- Group B streptococcus
- HIV/AIDS
- Listeria
- Maternal depression
- Obesity
- Placental abruption
- Preeclampsia (pregnancy-related hypertension)
- Sexually transmitted infections (STI's)
- Tobacco use
- Toxin exposure
- Toxoplasmosis
- Urinary tract infections
- Yeast infections

Common Pregnancy Complications[17, 18]

Anemia is a blood disorder caused by insufficient red-blood cells for carrying oxygen to organ tissues. Anemia can result in iron deficiency, which is associated with preterm birth and low birthweight.

Gestational diabetes is a type of diabetes that occurs only during pregnancy. Gestational diabetes can lead to excess growth, low blood sugar, respiratory distress syndrome, and jaundice in newborns, and increases a child's risk of developing type II diabetes later in life. Gestational diabetes puts pregnant women at risk of preeclampsia. It also puts women at risk of developing type II diabetes. Approximately 20% to 50% of women with gestational diabetes develop type II diabetes later in life.

Maternal Obesity increases a woman's risk for birth defects (especially neural tube defects), labor and delivery complications, fetal and neonatal death, maternal complications (e.g., hypertension, gestational diabetes, and preeclampsia), and delivery of large-for-gestational-age (LGA) infants. Obese women are also at increased risk for infertility.

Pregnancy induced hypertension (PIH) /preeclampsia is a condition characterized by high blood-pressure and excess protein in the urine after 20 weeks gestation. Complications of preeclampsia may include lack of blood flow through the placenta, destruction of red blood cells, elevated liver enzymes, and low platelet count. Preeclampsia can lead to eclampsia, a disorder that results in severe seizures, which cause organ damage for the mother and brain damage or death for the infant.

Prenatal depression is a serious mental illness interfering with a pregnant woman's ability to work, sleep, eat, and care for herself.

Labor and Delivery

The onset of regular and frequent contractions commences the labor phase of pregnancy. In an ideal circumstance, a baby is carried beyond 38-weeks—to full-term—and the infant is delivered vaginally. A healthy pregnancy increases the chance that a pregnancy will be carried to term.

There are approximately 4 million live births in the United States each year.

An unhealthy pregnancy (a pregnancy affected by complications or risk behaviors) may lead to **preterm birth** and/or **low birthweight**. By definition, birth before 37 weeks is "preterm": birth between 34 and 36 weeks is considered "late preterm" and "very preterm" births occur before 32-weeks gestation.[19] A low birthweight diagnosis requires a baby to be born weighing 5 lbs. 8 oz or less (2500 g).[20]

Top 3 Neonatal Complications[18, 21]

Jaundice: A common condition in which the newborn's liver is not developed enough to process billirubin, causing the baby to appear yellowish. Newborns with jaundice require monitoring because high billirubin levels can cause brain damage.

Anemia: A blood disorder caused by insufficient red-blood cells for carrying oxygen to the organ tissues. Anemia can lead to stunted growth in neonates.

Sepsis: A rare but serious infection usually caused by bacteria originating in the lungs, intestines, urinary tract, or gallbladder. If left untreated, the infection progresses rapidly leading to organ damage and death.

Infertility and the Impact of Infertility Treatment on Healthy Pregnancies

One in ten couples in the United States has difficulty conceiving a child.[22] Clinical guidelines suggest that couples should seek assistance for infertility if they have trouble getting pregnant after 12 months of trying if the woman is 35 years of age or younger. If the woman is over age 35, a couple should seek assistance after 6 to 10 months of trying without successful conception.[23]

Causes of Infertility[23]:

Infertility can be caused by a wide variety of underlying problems, and couples often experience more than one reason for infertility:

- Aging (fertility declines as men and women age).
- Cancer treatment.
- Certain chronic illnesses, such as diabetes or Hodgkin's disease.
- Damage to the reproductive organs.
- Exposure to radiation and certain chemicals, such as pesticides.
- Genetic conditions.
- Problems with ovulation (a woman's ability to produce an egg).
- Problems with sperm (amount, quality, or both).
- Sexually transmitted infections (STIs) and other reproductive infections.
- Tobacco, alcohol, or drug use.

Treatment options[23]:

After a thorough evaluation and diagnosis of infertility, treatment options include:

- Medications to assist with releasing an egg (ovulation).
- Surgery to repair part of the reproductive system. For example, scars in a fallopian tube can block eggs from traveling from the ovaries to the uterus.
- Insertion of sperm from the man or a donor into the woman's uterus (called artificial insemination or intrauterine insemination [IUI]).
- Assisted reproductive technologies (ART), which involve surgically removing a woman's eggs, fertilizing them with sperm in the laboratory, and then reinserting the fertilized egg into her uterus. In vitro fertilization (IVF) is an ART procedure.

Recommendations to Employers Regarding Infertility Benefits

Employers are increasingly providing coverage for infertility treatments. These treatments are expensive, and they can also put women at-risk for pregnancy complications and other reproductive health problems. Employers who provide infertility coverage should follow these guidelines to reduce cost, manage risk, and protect the health of beneficiaries:

- Mandate that network fertility centers inject the minimum number of eggs necessary to achieve a viable single birth. Multifetal pregnancies, common in women undergoing infertility treatment, are at high risk for complications and 61.9% result in preterm births.[1] ART-induced pregnancies account for less than 1% of births in the United States; however, they account for 17% of twins and 38% of triplets or higher-order multiples.[24] By selecting "fertility centers of excellence," large employers may be able to reduce the complications and unintended consequences of multifetal pregnancies.
- Set an age limit for infertility treatment.
- Set an annual or lifetime maximum for infertility treatment or set a maximum number of attempts per lifetime. Depending on their resources and philosophies, large employers have selected lifetime maximum amounts between $15,000 and $100,000; many clinical guidelines suggest a maximum of three attempts per lifetime.[25]
- Work with your health plan(s) to establish clinical indications for ART and other infertility treatments.
- Provide education and support services (e.g., health coaching, education materials, expert consultations) to women and their partners considering infertility treatment. Health coaches can help women and their families make informed decisions and better communicate with care providers.[26]

The Epidemiology of Birth in the United States

In the United States, population birth statistics show a move away from full-term vaginal births, toward preterm and low-birthweight births and cesarean delivery. Between 1996 and 2004, preterm births rose 14% in the United States. Over the past 10 years, the cesarean section rate increased a dramatic 50% (**http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57_12.pdf**).[27] In 2005, the U.S. cesarean section rate hit 31.8% (**http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57_12.pdf**); slightly more than double the rate experts believe is medically necessary.[27] Although these shifts are not entirely understood, trend drivers for poor birth outcomes include changes in the practice of obstetrics and population demographics.[28, 29]

Preterm Birth: An Overview of the Problem

The United States has a high rate of both preterm births and low birthweight births. Of the 81,562 babies born each week in the United States, 10,440 are born preterm and 6,769 are born with a low birthweight diagnosis.[1] Preterm birth occurs in approximately 12.8% of live births, and over 10% of newborns covered by employer-sponsored health plans are born prematurely.[1]

Ten percent (10%) of total dollars spent on hospital stays for children and adolescents fall within the neonatal period, accounting for approximately $4.6 billion in annual charges.[15]

Preterm birth is a complication of pregnancy that is particularly dangerous for newborns. Infants who are born prematurely suffer from a host of medical problems, including respiratory and cardiac distress, jaundice, feeding difficulties, hypoglycemia, temperature instability, and sepsis. These health problems can be caused by a lack of physical development; for example, respiratory problems can occur when an infant is born before its lungs are fully developed. Problems can also result from injury to the infant's immature central nervous system (e.g., intrauterine growth retardation, cerebral hemorrhage and infarction, hypoglycemia, septicemia, asphyxia) during gestation, labor, or delivery.[30]

Premature babies are at considerable risk for long-term impairment, including physical disability, cerebral palsy, mental retardation, and attention-deficit and hyperactivity disorder (ADHD).[31, 32] Medical experts estimate that a quarter of infants leaving neonatal intensive care units (NICUs) have chronic health problems.[31, 32] These chronic problems, including developmental delays and disabilities, put premature babies at risk for a variety of poor social outcomes as they age including the inability to hold employment, extended residence in a parent's household, lowered socio-economic status,[30] lower cognitive test scores, and behavioral problems.[33]

Medical and Environmental Risk Factors for Preterm Birth[34]

- African-American racial designation
- Multifetal pregnancy
- Periodontal disease
- Polygenetic illnesses
- Polymicrobial bacterial infections
- Poverty
- Previous preterm delivery
- Uterine or cervical abnormalities

Demographic Issues

Preterm labor and low birthweight are affected by demographic factors such as smoking status, maternal age, maternal nutritional status, and racial and ethnic disparities:

- Approximately 20% of childbearing-age women smoke in the United States.[35] Women who smoke during pregnancy are at an increased risk for preterm labor and low birthweight babies.

- Maternal age is steadily increasing in the United States due to a host of factors including delayed marriage, additional schooling, economic pressures, and career choices. Age is an important factor in pregnancy health. There is a high risk of birth defects and infertility associated with advancing maternal age. Infertility treatment increases the likelihood of a multifetal pregnancy, which in turn increases the likelihood of cesarean delivery, preterm labor, and low birthweight.[28]
- Studies have found that a high carbohydrate/low protein diet is associated with reduced fetal and placental growth.[36] Maternal nutrition during pregnancy affects child, adolescent, and even adult health by impacting both intrauterine growth and chronic disease risk.[37]
- African-American women are twice as likely to have a premature baby as are women in any other racial or ethnic group.[38]

Cesarean Deliveries: An Overview of the Problem

A **cesarean section (c-section)** is a surgical procedure used to deliver a baby. A surgeon makes an incision through a pregnant woman's abdomen and uterus and removes the fetus. Although many c-sections are literally life-saving, the procedure is increasingly being performed on low-risk women without medical indication. This trend is alarming because an unnecessary c-section introduces risks without associated benefits. Maternal risks include infection, hemorrhage, and blood clots. C-sections also require a longer recovery time than vaginal births do, and increase the risk for difficulty establishing breastfeeding, breathing problems in the newborn, severe and longer-lasting postpartum pain, and many other adverse effects. In addition, it is an expensive procedure contributing to the high cost of pregnancy-related medical care.[28]

The dramatic increase in the c-section rate is thought to be a confluence of the following factors:

- Changes in the practice of obstetrics, for example an increase in the use of epidurals and labor inductions.
- Health system pressures, such as the increasing cost of malpractice insurance for obstetrician-gynecologists (OB-GYNs).
- Demographic changes that lead to more high-risk pregnancies.

Practice Issues

In recent years, changes in the practice of obstetrics have led to increasing rates of primary and secondary c-sections. Practice changes include a greater reliance on epidurals for pain management, reliance on electronic fetal monitoring, high rates of labor induction, and a decrease in the number of vaginal birth after cesarean (VBAC) procedures. Many of these changes are a result of health system pressures such as malpractice lawsuits and the increasing cost of malpractice insurance for OB-GYNs, reimbursement issues, and hospital policies that favor intensive interventions (including c-section, continuous fetal monitoring, and pharmacologic pain management) over natural childbirth.

- Epidurals slow the second phase of labor, the period when the baby descends into the birth canal. Delays in phase II present the risk of asphyxiation, brain damage, or death to the infant. To avoid dire consequences, OB-GYNs frequently chose to deliver infants by c-section rather than continuing with vaginal labor.
- Electronic fetal monitoring (EFM) has been shown to increase the c-section rate by 40% without associated benefits.
- When labor is induced before a baby is ready to be born, induction is associated with

an increased risk for c-section and NICU admission. Between 1989 and 2002 the rate of labor induction increased by more than 200% (in 1989 only 9% of labors were induced, by 2006, 22.5% of pregnant women underwent an induction procedure **http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5844a2.htm**)).[29, 32]

- When a woman has a child by c-section and then experiences a subsequent pregnancy, there is a choice to deliver the second child vaginally or by c-section. When the child is delivered vaginally, the birth is called a **VBAC (a vaginal birth after cesarean)**. In the early 1990's, the popularity of VBAC procedures rose and, consequently, the c-section rate declined. However, in subsequent years, the trend has reversed.[28] The small risk of uterine rupture underpins the argument over the safety of VBACs. Not wishing to face law suits, pay high malpractice costs, or risk harm to patients, hospitals and physicians shy away from the practice. In fact, some hospitals have policies against VBACs, despite strong evidence to show that in most cases they are safe and successful (women with a history of cesarean and no history of VBAC are able to deliver a subsequent child vaginally 67% of the time; women with a history of cesarean and a prior successful VBAC are able to deliver vaginally 87% of the time).[39] Instead, hospitals and physicians elect to schedule pregnant women with a prior history of cesarean for another c-section.
- Elective c-sections (c-sections performed for the convenience or preference of a patient or provider) also contribute to the rising number of c-sections,[29] although the number of patient-preferred elective c-sections is lower than once thought.[40]

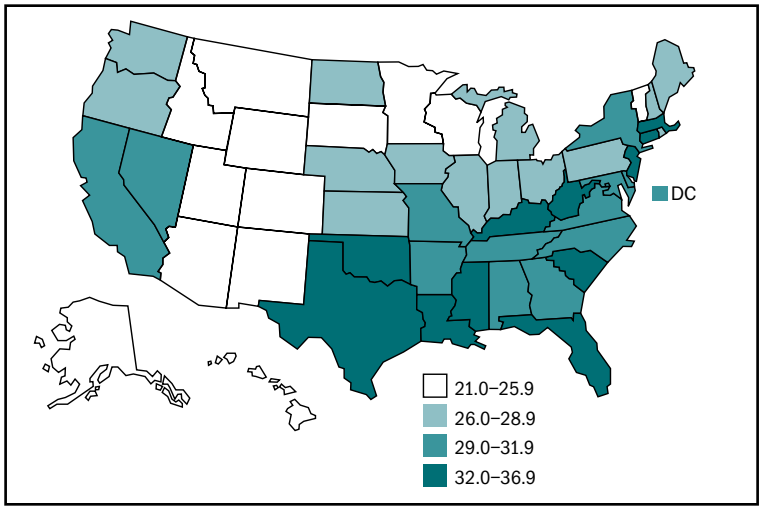
Demographic Issues

Demographic changes also impact the patterns, risks, and costs of pregnancy. Demographic drivers of the upward c-section rate include age and maternal weight:

In certain parts of the country, practice changes and demographic shifts have led to cesarean section rates that are more than double the estimated medical need of 15%.

- Women over the age of 40 have a 77% higher rate of cesarean delivery than women under 30.[41]
- Obese women and women who gain excessive weight during pregnancy are at higher risk for a cesarean delivery.[41]

Figure 4A: Picturing Cesarean Births Across the United States



Source: Centers for Disease Control and Prevention. QuickStats: Percentage of All Live Births by Cesarean Delivery — National Vital Statistics System (United States, 2005). Atlanta, GA: Centers for Disease Control and Prevention; 2006. Accessed on June 11, 2007.

Geographic Variation

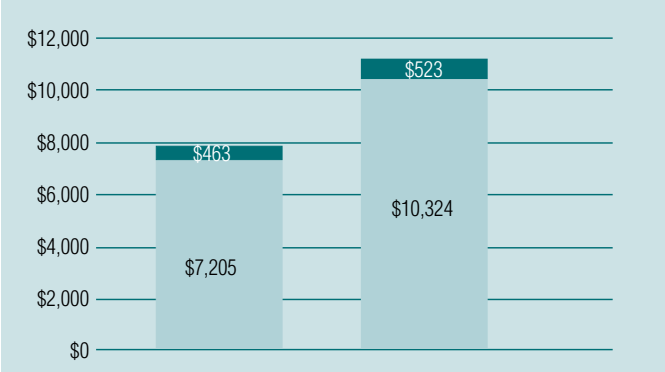
Figure 4A shows the geographic variation is c-sections across the United States. Rates are highest in the South and along the East Coast. In these areas, changes in the practice of obstetrics and demographic shifts have had the most profound impact on pregnancy and delivery.

Creating the Value Proposition for Investing in Healthy Pregnancies

Pregnancy-Related Healthcare Costs

Pregnancy and childbirth account for nearly 25% of all hospitalizations in the United States.[42] Among women with employer-sponsored health coverage who delivered a baby in 2004, prenatal care and maternity-related hospital payments *combined* averaged $7,737 for a vaginal delivery and $10,958 for a cesarean delivery (these figures include patient out-of-pocket costs).[42] Payments are a true measure of cost for employers; however, it should be noted that payments are substantially lower than charges due to negotiated provider and facility discounts. The higher cost of a cesarean delivery includes $2,090 in additional hospital expenditures and $723 in additional payments for professional fees resulting from the longer length of hospital stay.[42] These estimates do not include the highest cost and most complicated deliveries (outliers) and are thus are conservative estimates.

Average Prenatal Care and Maternity-Related Hospital Payment for Privately-Insured women, 2004



Source: Thomson Healthcare. *The Healthcare Costs of Having a Baby.* Santa Barbara, CA: Thomson Healthcare; June 2007.

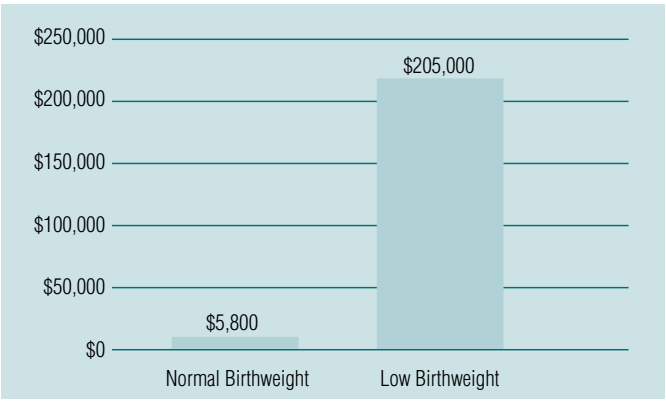
Complications of Pregnancy

Annually, over $1 billion is spent on hospitalizations related to pregnancy complications.[43] Preterm birth is one of the most expensive complications of pregnancy. In 2005, preterm birth cost the United States at least $26.2 billion, or $51,600 for every infant born prematurely.[44] Nearly half of all charges related to prematurity fall in the laps of employers and other private insurers.[45]

In addition to excess medical costs, employers face indirect costs related to preterm birth/low birthweight, including absenteeism, productivity declines, and long-term disability.

- Absenteeism may result for both parents if the mother and/or baby have an increased length of stay in the hospital, or if the infant requires extra doctors' appointments or suffers from a chronic condition. A complicated birth may also cause additional stress for parents. Stress can reduce a person's ability to be productive at work. Lost household and labor market

Infant Hospital Charges



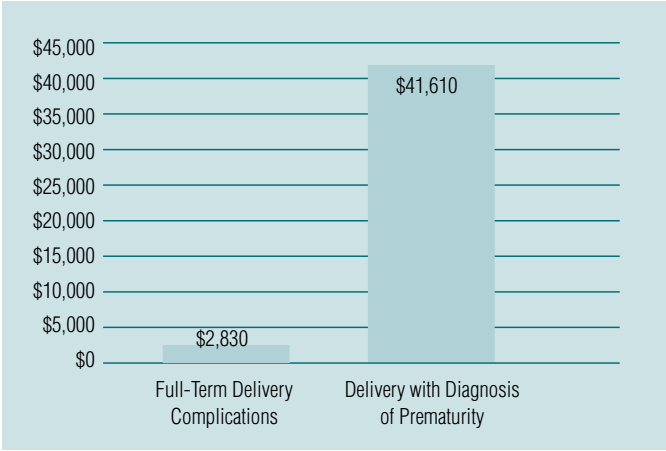
Source: Cuevas ZKD, Silver DR, Brooten D, Youngblut JM, Bobo CM. The cost of prematurity: hospital charges at birth and frequency of rehospitalizations and acute care visits over the first year of life: a comparison by gestational age and birthweight. *Am J Nurs*; 105(7):56-64.

Preterm birth costs the U.S. economy $26.2 billion annually in medical, educational, and lost productivity costs.[1]

productivity associated with preterm births totaled $5.7 billion in 2005.[45]

- Complications of pregnancy account for 4,039 cases of short-term disability per million covered lives. In 2004, the average length of a pregnancy-related short-term disability is 7 days.[46]
- Complications of pregnancy account for 203 cases of long-term disability per million covered lives. The major causes of long-term disability are: twin pregnancy, premature labor, antepartum hemorrhage, postpartum hemorrhage, and other complications. Most cases resolve within 1 year.[46]

Healthcare Costs Paid by Employees for Care in the First Year of Life, 2001



Source: March of Dimes. *Costs of Maternity and Infant Care.* White Plains, NY: March of Dimes; June 2007

Costing Out an Unhealthy Pregnancy

Analyzing your company's medical claims will help you better understand the cost of pregnancy complications in your population. Standard metrics related to pregnancy outcomes may be able to help you identify beneficiary risk profiles, healthcare access problems, or other issues. Claims data, paired with the following information, can help you develop a value proposition for investing in healthy pregnancies[28]:

- Number/rate of preterm births.
- Rate of cesarean delivery.
- Rate of NICU admissions and re-admissions.
- Rate of labor induction.

To learn more about pregnancy-related costs, tract the following diagnosis and procedure codes:

Diagnosis Codes[28]

640-648: Complications mainly related to pregnancy.
650-659: Normal delivery and other indications for care in pregnancy, labor and delivery.
660-669: Complications occurring mainly in the course of labor and delivery.
670-677: Complications of the puerperum (after childbirth).

Procedure Codes[28]

73.0: Labor induction by artificial rupture of the membranes.
73.1: Other induction of labor.
73.4: Medical induction of labor.
74.0-74.9: Cesarean section.

Improving Health While Reducing Costs

A pregnancy beset by complications is more costly to employers than a healthy pregnancy; and sick mothers and newborns are more costly to employers than healthy ones. Facilitating healthy pregnancies is in the best interest of both employers and employees.

For more information on evidence-informed pregnancy benefits, refer to the Plan Benefit Model in Part 2.

There are several ways employers can improve beneficiaries' odds of having a healthy pregnancy and a healthy birth:

- Provide comprehensive, evidence-informed benefits.
- Remove financial barriers to essential care by providing **first-dollar coverage** (zero cost-sharing) for preventive services, including preconception, prenatal, and postpartum care.
- Offer pregnancy-related health promotion programs.
- Select and incentivize high-quality healthcare providers in plan provider and facility networks.
- Include racially and ethnically diverse providers, as well as providers with language competencies, in plan provider and facility networks.

Because the prevention and early detection of pregnancy-related health problems avoid serious illness for mother and child, large employers are likely to benefit from worksite education and health promotion initiatives that provide employees with information about healthy pregnancies and essential healthcare services.

The following recommendations can assist employers in developing, implementing, and evaluating pregnancy-tailored benefits, programs, and policies.

Practical Solutions for Employers: Innovative Strategies

Employer Checklist

Employers should take action in order to ensure beneficiaries are as healthy as possible before, during, and after pregnancy. Health improvement will increase the likelihood of employees returning to full productivity following birth, and reduce the excess medical costs associated with pregnancy, postpartum, and neonatal care.

Healthcare Benefits

- ✓ Ensure that your health plans provide comprehensive preconception, prenatal, and postpartum care services. Ask your plans if they provide innovative services such as doulas/birth assistants, breast pumps, lactation consultation support, or other services.
- ✓ Reduce or eliminate copays/coinsurance for preventive care.
- ✓ Make sure that your plans cover comprehensive contraception options (e.g., hormonal pills, sterilization, IUDs, etc). Reduce or eliminate copays/coinsurance on these interventions, which help prevent unintended pregnancies.
- ✓ Ask your health plans to develop and maintain a referral list of pregnancy care centers and fertility clinics with good outcomes (e.g., low cesarean section rates for hospitals, responsible implantation practices for fertility centers). Improved outcomes and lower costs are realized

when beneficiaries seek care with high-quality providers. For pregnant women, key measures of provider quality are: a low primary c-section birth rate, a low labor induction rate, high prenatal care satisfaction, a high VBAC rate, and a low maternal/child morbidity and mortality rate.[47]

Communication and Education

- ✓ Develop special information packets about healthy pregnancy. Disseminate this information (in more than one language, if appropriate) to beneficiaries of childbearing-age during open enrollment.
- ✓ Link employees to outside clinical and education resources, especially if there is employee concern over privacy issues.
- ✓ Help beneficiaries establish a relationship with a prenatal care provider in a medical home. Encourage women to choose a birth setting with low rates of intervention, and discuss her goals and preferences with her care provider.

Health Promotion Programs

- ✓ Employer-based pregnancy education programs can facilitate healthy behaviors. Pregnancy education programs should:
  - ○ Encourage good preconception health and the management of preexisting chronic conditions. Women should receive preconception counseling and support regarding exercise, healthy eating, weight control; health maintenance; STI prevention; abstinence from tobacco, alcohol, and illicit drugs; and information on appropriate birth spacing.[28]
  - ○ Educate employees and their partners on the signs of preterm labor and risk factors for prematurity and low birthweight. Prenatal classes and distributed literature are an ideal venue for these messages. Health coaches, EAP staff, case managers, and online resources can increase the bandwidth of the message.
- ✓ Include pregnancy-related health issues in existing wellness programs or develop new programs specific to pregnancy concerns. Examples could include:
  - ○ Tobacco cessation during pregnancy: Smoking during pregnancy is associated with a wide variety of complications and risks.
  - ○ Stress reduction: Studies indicate that stress levels during pregnancy have a major impact on the health of the child, and impact preterm birth and low birthweight.[48]
  - ○ Nutrition counseling: Support and guidance in food selection during pregnancy improves maternal and child health.[37]
- ✓ Offer on-site well-baby/pregnancy education counselors or provide phone access to similar services. If this isn't possible, work with your EAP to include pregnancy support information in existing resources.
- ✓ If your company has on-site medical faculties, consider including basic preconception and prenatal care services.

Policies

- ✓ If your company hasn't already moved to a tobacco-free worksite, implement a smoking ban to protect women from secondhand smoke.
- ✓ Educate beneficiaries on maternity leave, FMLA, parental leave, and other support policies your company may offer.
- ✓ Support women who choose to breastfeed their infants by providing a worksite lactation program.
- ✓ Provide incentives for healthy pregnancy behaviors. For example, provide rebates or reimbursements for breast pumps, child car seats, parenting classes, or birthing classes.

Overcoming Challenges to Health Promotion

Remove Barriers to Participation

- Make classes and services convenient and accessible to as many beneficiaries as possible.
- In addition to offering programs at as many company locations as possible, employers should consider offering staggered hours. After-hours availability will increase the likelihood of women being able to attend program activities without compromising productivity. It will also allow women employed at other campuses to participate.
- Consider offering pregnant employees the opportunity to meet with counselors or educators one-on-one at home as well as at the worksite or in local healthcare facilities.

Offer Multiple Modes of Contact

- Since employees may be located on- or off-site and few non-employee beneficiaries have contact with the worksite, it is important to communicate healthy pregnancy information though a wide variety of formats: emails, phone calls, flyers, posters, webinars, podcasts, intranet postings, etc.
- Distribute information whenever and wherever beneficiaries look for health information.
- Like many other types of health promotion programs, successful healthy pregnancy programs use multiple formats to effectively communicate health information. A bilingual format is the most important format for reaching the broadest audience in the modern workplace.

Understand the Beneficiary Population

- To gauge the needs of your preconception and pregnant beneficiaries and understand how best to serve them, assess their basic characteristics. An awareness of key demographic factors impacting pregnancy health—age, stress level, dietary choices, race, language competencies, literacy level, and socio-economic status—can help employers develop relevant and tailored programs.
- Other important factors to consider are beneficiaries' preventive care-seeking behaviors, and level of concern regarding privacy and confidentiality. Many women are wary to let their supervisors know they are pregnant or intend to become pregnant. Offering health promotion programs through a third-party vendor may alleviate some of these concerns.

Understand the Corporate Culture

- Every company is different and each woman will experience her pregnancy within the context of her individual work environment. Understanding the corporate culture will allow an employer to gauge what features of a healthy pregnancy program will work most effectively in their particular population.

Pregnancy-Related Care Around the World

Large U.S.-based companies are increasingly becoming globalized. As such, corporations are considering the unique health risks employees face in different parts of the world. Women of childbearing-age work in most developed and developing countries, and in most industry sectors. As a result, companies are looking for the best ways to provide high-quality pregnancy care beyond the U.S. border. The following section highlights issues facing pregnant women on a global level, and presents strategies companies can use to promote health.

Global Pregnancy Risks

Pregnancy risks vary greatly around the world. Depending on the region, a pregnancy could be at risk due to[36]:

- Baseline nutritional problems, such as anemia or protein deficiency.
- Cultural norms that permit women to use tobacco, alcohol, or drugs during pregnancy.
- Environmental exposure to toxins.
- Infectious diseases, including HIV, STIs, and hepatitis B.
- Lack of access to clean drinking water and nutritious food.
- Lack of access to prenatal care.
- Malaria.
- Parasites and complications from diarrhea.

These risks can contribute to pregnancy complications such as preterm birth, low birthweight, and maternal or infant mortality. Since pregnancy-related risks and complications vary from region to region, it is important for employers to understand pregnancy health risks in the local environment.

Other Issues

Prenatal care: Access to pregnancy care providers is limited in some parts of the world. Inability to access medical care hinders women from receiving essential prenatal care,[37] and can put women at risk for a host of pregnancy complications and poor birth outcomes. Even when women have access to care, its value is not always well understood. For example, in some cultures, the matriarch is responsible for making pregnancy-related decisions, many of which are not medically informed. Culturally competent employee education about the value of perinatal care can be helpful.

Cesarean deliveries: C-section rates are on the rise, not only in the United States but also in other parts of the world. Drivers for this trend include rising maternal weight and local physician practice style. There is also a positive and significant correlation between the gross national product per capita and the rate of c-section. Rates are also higher in private versus public hospitals.[49]

Nutrition: A woman's nutritional status, both before and during pregnancy, significantly impacts her health and the health of her future infant.[36] Emphasizing proper nutrition may motivate preconception and pregnant beneficiaries to eat the most nutritious foods possible. Many of the nutrients women need during pregnancy such as iron (from meats), folate (from fortified grains or fresh vegetables), and calcium (from dairy products) may be difficult to acquire in some parts of the world due to supply chain problems, cost barriers, or other issues, including intra-familial food distribution. Providing employees with a list of locally available nutritious foods could help women integrate healthy food into their diets. Providing pregnant beneficiaries with prenatal vitamins can also help improve their nutrition.

Infections: All women are at risk for infection during pregnancy. Treating infections early has been shown to reduce preterm labor, morbidity, and mortality.[36] Yet women in certain parts of the world may lack access to even the most basic medications used to treat infections.[36] Further, contaminated or counterfeit medications are a concern in the global market. Providing beneficiaries with a list of trusted pharmacies or suppliers may help them purchase safe medications.

Summary Points

- Employers should take action in order to ensure beneficiaries are as healthy as possible before, during, and after pregnancy. Health improvement will increase the likelihood of employees returning to full productivity following birth, and reduce the excess medical costs associated with pregnancy, postpartum, and neonatal care.
- Comprehensive health benefits, incentives, and clear communication can increase beneficiary utilization of preventive preconception, prenatal, and postpartum care.
- Employers can leverage existing wellness/health promotion programs and healthcare benefits to improve the health of pregnant beneficiaries. Making simple changes to existing programs (e.g., exercise, weight management, and tobacco cessation) can broaden their reach and effectively support women in pregnancy health promotion.

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4 Healthy Pregnancy and Healthy Children: Opportunities and Challenges for Employers

The Business Case for Protecting and Promoting Child and Adolescent Health

This issue brief provides the business case for protecting and promoting child and adolescent health. It includes an overview of children's key health issues, information on the economic and workplace burden of children's illness, and important prevention opportunities. It also provides guidance on how employers can support improved family health.

Introduction

In 2008, there were 73.9 million children in the United States between 0 and 17 years of age, accounting for 24% of the U.S. population.[1] Approximately 12.8% of all children under the age of 18 have a chronic and severe health problem that requires more intensive or specialized care than children normally require.[2]

Employers are concerned about child health and health care for several reasons.

1. **Employers provide healthcare coverage to more than half the children in the United States.** Almost all large employers provide dependent healthcare coverage. Most large employers provide healthcare coverage for qualifying dependents from birth through age 19, and many provide coverage for young adults aged 20 to 25, so long as the dependent is enrolled in school.[3] In 2007, 54.2% of children had employer-sponsored health coverage through a parent or legal guardian.[4]
2. **A substantial proportion of employee lost work time can be attributed to child health problems.** Employees who have access to innovative work/life benefits such as on-site childcare and flexible working arrangements, may be able to minimize lost productivity when their children are ill. Research also shows that when the parents of chronically ill children receive help and support from their employers, they are better able to concentrate on their jobs, and remain with their companies longer.
3. **Many common and costly child health problems, including injuries, substance abuse, unintended pregnancy, and sexually transmitted infections, are preventable.**

There is a strong business case for both comprehensive child health benefits and innovative work/life benefits that help parents balance work and home

Improving the health of children will likely benefit an employer's bottom line by reducing both direct healthcare costs and indirect costs, such as lost productivity.

The following sections highlight the most critical issues in child and adolescent health, and present opportunities employers have to improve the health of these beneficiaries and reduce healthcare costs.

Child and Adolescent Illness and Injury: Direct and Indirect Costs for Employers

Healthcare Costs

In 2006, **national healthcare expenditures** for children and adolescents totaled $99 billion.[5] Among children who used any type of healthcare service in 2006, the average medical expense was $1,560 per child.[5, 6] However, among children with a special health care need, the average medical expense is much higher—sometimes as much as three times higher—than for children without special health care needs.[7] As is common in adult populations, a relatively small proportion of children are responsible for the bulk of total medical expenditures. For example, while the average per child healthcare expenditure was $1,115 in 2006, the median expense was only $316.[6]

Workplace Burden

Child and adolescent illness and injury are a major cause of employee absence.

- Working parents with young children in childcare typically miss 9 days of work annually due to child illness.[8]
- The parents of elementary-school-aged children miss up to 13 days of work annually due to child illness.[8]
- The parents of children with special health care needs are particularly vulnerable to lost work time. When asked about their experience during the previous year, parents of special needs children report an average of 20 missed school/childcare days, 12 doctor or emergency department visits, and 1.7 hospitalizations.[9]

An **acute illness** is characterized by signs and symptoms that are of rapid onset and short duration (a week or less). Examples of acute illnesses include colds, flu, and ear infections.

A **chronic illness** impacts a child's health for 3 months or longer. Examples of chronic illnesses that affect children include asthma, diabetes, juvenile rheumatoid arthritis, cystic fibrosis, spina bifida, emotional or behavioral disorders, and congenital heart diseases.

Family-Friendly Benefits

Employees with sick children who receive help and support from their employers are usually better able to concentrate on their jobs, and remain with their companies longer. Employee retention is a key driver of customer retention, which in turn is a key driver of company growth and profits.

Access to quality childcare at the worksite is very important to employees. Employers benefit from this arrangement because it: (a) increases employee productivity, (b) lowers absenteeism, (c) reduces the number of employees who leave the job, and (d) increases company profits and value. For example:

- Sixty-three percent (63%) of employees with sick children stated that their productivity improved when they used the childcare program at their company.[8]
- Fifty-four percent (54%) of employers stated that childcare services reduced missed workdays by as much as 20% to 30%.[12]
- Childcare programs can reduce employee turnover by 37% to 60%.[13]

Most large employers also offer **employee assistance programs (EAP)** and **work/life benefits**. These programs may provide services at the worksite, via phone, or contract with providers in the community. Examples of EAP and work/life benefits include[14]:

- Childcare referrals.
- Counseling services.
- Education programs.
- Legal services.
- Referrals to mental health providers for ongoing care.
- Wellness programs for employees and sometimes family members.

The **Family Leave and Medical Leave Act (FMLA)** of 1993 applies to employers with 50 or more employees. FMLA provides employees with up to 12 weeks of unpaid leave annually, and covers a broad spectrum of health-related problems. Employees may take leave for the birth or adoption of a child; to care for a seriously ill parent, spouse, or child; or to address their own health needs. Throughout the duration of the leave, the employee's job and healthcare benefits are protected.

Although FMLA is of great benefit to employees, it is also very costly for employers. According to the United States Department of Labor, 50 million Americans took FMLA leave in 2000.[15] A study by the Employment Policy Foundation (EPF) reported that costs for companies with employees who took leave under FMLA in 2004 totaled nearly $21 billion dollars.[15] These financial losses were caused by costs for labor replacement, lost productivity, and continued funding of employees' healthcare benefits.[15]

These missed work days result in lost productivity costs for employers.

- Employee absences due to childcare breakdowns cost businesses in the United States approximately $3 billion every year.[8] Many childcare breakdowns are a result of illness or injury: schools, childcare centers, nannies, and other care providers typically do not accept children when they are ill, so parents must stay home from work in order to care for their child.
- Costs are highest among the parents of children with special health care needs. One study found that mothers of children who had a developmental delay or disability (e.g., cerebral palsy, autism) lose around 5 hours of work weekly, which totals 250 hours per year and results in lost productivity costs of $3,000 to $5,000 a year (assuming an hourly employee cost of $12 to $20, including fringe benefits).[10]

In addition to absenteeism, child illness can result in parents being late to work, reduced concentration at work (lost productivity), and in extreme cases, an early exit from the workforce.[11]

Child Health Promotion and Disease Prevention

Children pass through an identifiable sequence of physical, cognitive, and emotional stages as they grow and develop.[16]

The major **stages of development** are:

Infancy: birth to 11 months
Early childhood: 1 to 4 years
Middle childhood: 5 to 10 years
Adolescence:
Early: 11 to 14 years
Middle: 15 to 17 years
Late: 18 to 21 years

The PlanBenefit Model (provided in Part 2) was specifically designed for children aged 0 to 12 years, and adolescents aged 13 to 21 years.

Well-Child Care

Well-child care is preventive care for children and adolescents. The *Bright Futures Guidelines* for promoting health in infants, children, and adolescents recommend that children visit a primary healthcare provider during[17]:

- Infancy—newborn; within 1 week; 1, 2, 4, 6, and 9 month visits.
- Early Childhood—1 year; 15 months; 1.5, 2, 2.5, 3, and 4 year visits.
- Middle Childhood—annually.
- Adolescence—annually.

Some children may require more frequent well-child visits for preventative health care.[18, 19]

Regular well-child visits help to ensure that a child is growing and developing normally. During preventive healthcare visits, a primary healthcare provider should:

- Assess a child's growth and development.
- Administer immunizations according to the recommended schedule for the child's age.

- Refer the child to a specialist if the child is experiencing physical or developmental problems.
- Instruct parents about the nutritional needs of the child at each stage of life.
- Discuss how the child is performing in school.
- Provide surveillance and screening for developmental delays, behavioral problems, and mental health issues, and note if the child's behavior is typical for his or her age.
- Counsel parents with children who are experiencing minor behavioral problems, or who are not getting along with other children. Refer parents to mental health specialists if their child is exhibiting serious behavioral problems, or their child has become withdrawn or depressed.
- Provide anticipatory guidance—the discussion of age-appropriate strategies to ensure good health.

Well-child visits are essential to prevent, detect, and manage problems before they develop into more serious or chronic conditions.

The Economic Benefit of Prevention and Early Detection

One of the primary purposes of well-child care is to identify children affected by a physical, mental, or developmental problem as early in life as possible. Approximately 16% to 18% of children in the United States are diagnosed with disabilities that include speech-language impairments, mental retardation, learning disabilities, and emotional/behavioral disturbances.[20] Yet, only 20% to 30% of children with disabilities are diagnosed and start treatment before beginning school.[20]

Children with disabilities who enter early intervention programs prior to starting kindergarten are more likely to complete high school; enter and remain in the workforce; and avoid teen pregnancy, delinquency, and violent crimes. Research has shown for every dollar spent on early intervention services for children with disabilities, $13.00 are saved.[20]

Employers also benefit from the early detection of child health problems. Children who receive early intervention services are better able to function later in life. Improved functionality can help to lower employee absenteeism and reduce turnover because children who are able to care for themselves, attend school, and perform developmentally-appropriate tasks require less care from their parents.

Well-child visits are also designed to help parents learn how to care for their children and address common problems. For example, healthcare providers teach parents about nutritional requirements, how to prevent injuries, and how to properly discipline children with behavioral problems.[21] Such guidance may reduce parental stress, improve productivity, and reduce lost work days due to child illness.

In addition, well-child visits can benefit the health of parents (employees). Recently, well-child care visits have been used to detect intimate partner abuse (the new term for domestic violence), and screen for maternal depression.[22] Parents may also personally benefit from health education and injury-prevention counseling conducted during well-child visits (e.g., motor vehicle safety, food safety, etc).

Key Health Risks: Children

While most children are generally healthy, all children face health risks. Business Group membership surveys show that large employers are particularly concerned with child health risks that are serious (i.e., they result in long-term or permanent problems) and costly to treat or manage. In 2005, the Business Group asked its large-employer members to name the most "problematic" health conditions that affected their child and adolescent beneficiaries (refer to Figure 4B on page 24). Respondents reported that for children aged 0 to 12 years preterm birth, asthma, diabetes, injuries, and infections were the most problematic conditions; for adolescents aged 13 to 18 years, the most problematic conditions were asthma, behavioral health problems, injuries, and obesity.[3]

Vaccine Preventable Diseases

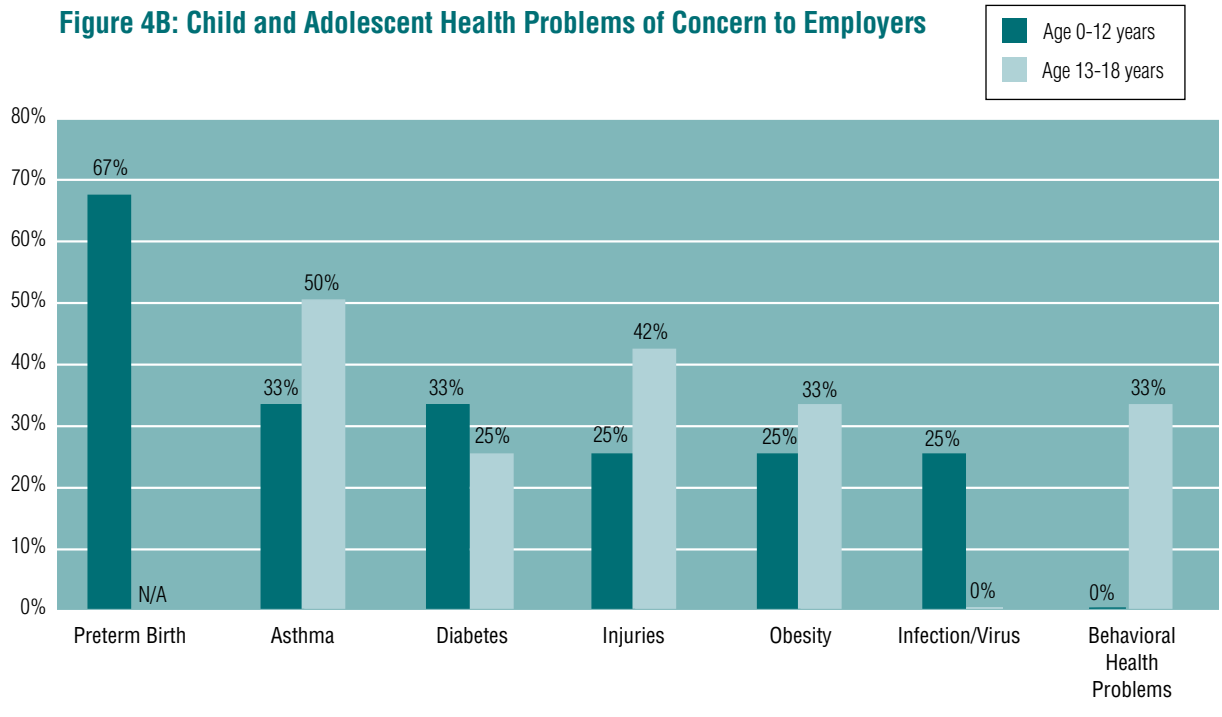
Health Impact

Childhood immunizations have eliminated or nearly eliminated many infectious diseases that affected children in the past.

Immunizations have a powerful positive impact on the overall health of children. Childhood immunization[21]:

- Is generally safe;
- Protects children from a number of potentially serious and even deadly childhood diseases;
- Prevents outbreaks of infectious diseases and the spread of epidemics; and
- Is one of the only defenses against many childhood infections, such as chicken pox, polio, and measles.

Figure 4B: Child and Adolescent Health Problems of Concern to Employers



Source: National Business Group on Health. *Maternal and Child Health Benefits Survey*. Washington, DC: National Business Group on Health; January 2006.

Clinical studies demonstrate that immunization has produced a dramatic decline in the incidence of childhood infections. For example:

- During the first 6 years of use, the influenza vaccine reduced the incidence of invasive *Haemophilus influenzae* disease by 95% in children under 5 years of age.[23]
- Before the varicella (chicken pox) vaccine was available, 4 million cases, 11,000 hospitalizations, and 100 deaths were caused by chicken pox each year. Typically a child with chicken pox misses 5 to 6 days of school.[24]

It is critically important to maintain a high vaccination rate in order to prevent a resurgence of potentially deadly infectious disease. For example, if the measles vaccine was no longer available in the United States, 3 to 4 million measles cases would develop every year, which could result in more than 1,800 deaths, 1,000 cases of encephalitis, and 80,000 cases of pneumonia.[25]

The immunization rate for children of all ages in the United States is high. However, certain groups of children, such as racial and ethnic minorities and those who live in low-income families, have lower rates.[26]

Further, many children, from all types of backgrounds, delay their immunizations and are therefore susceptible to disease—and a risk to other children—for a period of time. For example, more than 24% of toddlers in the United States are missing one or more recommended immunizations.[27] These children are vulnerable to serious illnesses, including polio, measles, mumps, rubella, diphtheria, tetanus, pertussis, invasive *Haemophilus influenzae* type b infection, hepatitis B, and varicella because they have not completed the recommended vaccination series.[28]

Economic Burden

Society benefits when *all* children receive recommended immunizations. Vaccines are **cost-effective**, and most routine child vaccines are **cost-saving**. The routine childhood vaccination program saves nearly $10 billion in direct medical costs and $43 billion in societal costs for every **birth cohort** immunized.[29] Many **cost-benefit analyses** indicate that vaccination against most common childhood diseases results in large returns on investment: for every dollar spent on vaccination, between $10 and $18 are saved in medical and indirect costs.[23, 30]

Most important to healthcare payers is the fact that the introduction of new vaccines has led to a substantial and immediate decline in medical spending for some conditions. For example, in 1995, a vaccine to protect against varicella (chickenpox) was added to the routine childhood immunization schedule. Between 1994 and 1995, the year before the vaccine was introduced, the total estimated direct medical cost of varicella hospitalizations and ambulatory visits reached $85 million. By 2002, the cost of varicella declined to $22.1 million.[29]

All 50 states have some form of school-based immunization requirement. These crucial requirements have greatly contributed to the success of immunization programs in the United States. School-based immunization programs have also reduced racial, ethnic, and socioeconomic dispairties in immunization rates.

Prevention Opportunities

To encourage timely immunization, employers should provide coverage for all recommended vaccines at no cost to beneficiaries (i.e., no copays or coinsurance). The Advisory Committee on Immunization Practices (ACIP) provides national recommendations on immunizations. These recommendations change from time to time. For the most up-to-date set of recommendations, visit the ACIP website at: **http://www.cdc.gov/vaccines/pubs/ACIP-list.htm**.

SIDS

Sudden infant death syndrome (SIDS) is defined as the sudden unpredictable death of an apparently healthy infant under 1 year of age, with no detectable cause after a thorough case investigation.[31] SIDS is the leading cause of infant death between 1 month and 1 year in the United States; most deaths happen when infants are between 2 months and 4 months of age.[32]

Infants born to mothers who smoked during pregnancy are twice as likely to die of SIDS than infants whose mothers did not smoke. Approximately 14% of SIDS deaths are caused by smoking during pregnancy; in 2001, 299 infants died as a result of smoking-induced SIDS.[33] Infants who are exposed to tobacco smoke following birth are also at a greater risk of developing SIDS than other infants.

Health Impact and Economic Burden

An infant death that leaves unanswered questions causes intense grief for parents and families. Parents may require counseling to overcome feelings of guilt and grief, and they may require extended time off in order to recover from the loss.

Prevention Opportunities

Employers can help prevent SIDS deaths by educating employees on risk factors for SIDS, including sleeping positions and tobacco use.

- The American Academy of Pediatrics (AAP) recommends positioning infants in the supine position (laying on their back) during the first few months following birth. Placing infants in the prone position (laying on their tummy) is associated with an increased incidence of SIDS. Deaths from SIDS have decreased by more than 53% since 1992, which is when the American Academy of Pediatrics (AAP) first recommended that caretakers place infants on their backs.[16, 34, 35]
- Tobacco use treatment is critical for preconception, pregnant, and postpartum women. Approximately 21% of American women of childbearing age smoke and 10.7% of women in the United States admit to smoking during pregnancy.[36] Tailored smoking cessation programs are proven to help women reduce or eliminate their tobacco use, and tobacco cessation treatment for pregnant women is considered one of the most cost-saving preventive services. Clinical trials have shown that $3 are saved in healthcare costs for every $1 invested in treatment.[37]

Employers should offer comprehensive tobacco use treatment benefits (screening, counseling, and medication); and instruct their health plans to actively educate preconception and pregnant women on the dangers of tobacco use and available treatment services.

Asthma

Asthma is a chronic inflammatory disorder of the large and small airways. It is classified in four ways: mild intermittent, mild persistent, moderate persistent, and severe persistent. Nobody knows exactly why some children develop asthma. It may be inherited, and it is usually associated with allergies.[16] Asthma affects approximately 8.3 million children in the United States,[38] and the rate of asthma is increasing population wide. The death rate among children with asthma under the age of 19 has increased 80% since 1980.[39]

As a group, asthma, pneumonia, and acute bronchitis are responsible for nearly $3 billion dollars in healthcare expenditures each year.[44]

Health Impact and Economic Burden

Asthma is one of the most common and expensive chronic diseases of childhood: students with asthma miss nearly 13 million school days each year due to illness[40] and asthma accounts for almost 500,000 hospitalizations annually.[41]

- Asthma costs the U.S. economy an estimated $19.7 billion each year. This includes $14.7 billion in direct health care costs and $5 billion in direct costs such as lost productivity.[42]
- The cost of treating asthma in a child or adolescent is approximately $3.2 billion annually.[43]
- Asthma is responsible for approximately 14 million lost school days each year.[44]

Prevention Opportunities

Many asthma-related hospitalizations and emergency department visits are avoidable.[44] Appropriate medication and treatment regimens can help children avoid asthma flare-ups and crises. To encourage the appropriate management of childhood asthma, employers should[45]:

- Remove financial barriers to care by reducing or eliminating copays and coinsurance on controller medications and asthma-related office visits.
- Provide comprehensive tobacco use treatment benefits. Women who smoke during pregnancy are more likely to deliver infants with respiratory problems, including asthma, and parents who smoke in their homes are more likely to have children that suffer from asthma.
- Consider providing coverage or subsidizing non-medical devices and equipment that are important for asthma management, such as mattress and pillow covers, air vent filters, and dehumidifiers.
- Educate employees on asthma and asthma management at health fairs or as part of health promotion programs.
- Develop innovative incentives to reward treatment compliance.

Upper Respiratory Infections

The most common types of upper respiratory tract infections (URIs) in children are: nasopharyngitis, pharyngitis, tonsillitis, influenza, and otitis media.[16]

- Respiratory infections are the most common reason for acute illness in children.[46]
- Children have an estimated three to eight colds a year.[38]
- Infants and young children, particularly children from 6 months to 3 years of age, develop more severe respiratory tract infections than older children.[16]

Health Impact

Respiratory infections cause pain and discomfort for children, result in restricted activity days or missed school days, and are easily transmitted to other children and adults. Children who develop respiratory infections during infancy are also at greater risk of developing bronchial obstruction during their first 2 years, and asthma at 4 years of age.[47]

Economic Burden

In addition to direct medical costs, URIs result in lost productivity and absenteeism costs for employers. Studies suggest that parents lose 1.2 hours of work time each time their child under the age of 12 gets a cold.[48] In total, children's colds are responsible for $230 million dollars of lost productivity each year.[48]

Prevention Opportunities

Children with URIs are frequently treated with antibiotics, despite the fact that antibiotics are not indicated for such infections. Treating children with URIs with antibiotics can be harmful because it[44]:

- Decreases the effectiveness of currently prescribed antibiotics against bacterial respiratory organisms.
- Increases the child's risk of developing a drug-resistant URI.

Despite the known dangers of using antibiotics to treat URIs, an estimated $227 million dollars are spent each year to treat patients with URIs.[38] Employers should educate their beneficiaries on the appropriate use of antibiotics, and should work with their health plans and pharmacy benefit managers (PBMs) to develop strategies to curb inappropriate prescription patterns.

Employers also have opportunities to help prevent the spread of URIs through employee education. For example, employers could provide prevention information in new parent classes, in existing health promotion programs, at health fairs, in open enrollment materials, or at the worksite. These materials should remind parents to teach their children to[16]:

- Thoroughly wash their hands.
- Use a tissue to cover their noses and mouths when coughing and sneezing.
- Put soiled tissues into a wastebasket.
- Avoid sharing cups, spoons, dishes, and towels with other children and adults.
- Avoid other children who are ill.

Injuries (Children and Adolescents)

Childhood Injuries

Unintentional injury is the leading cause of death for children 1 to 4 years of age. In 2000, unintentional injury caused nearly 41% of all deaths among children aged 5 to 9 years. Fifty-six percent (56%) of these injuries resulted from motor vehicle crashes.[49, 50]

Adolescent and Young Adult Injuries

Unintentional injury is also the leading cause of death for children 10 to 24 years of age.[50] Among young people aged 10 to 24 years, 17,743 died as a result of unintentional injuries in 2006. Almost seven of 10 of these deaths resulted from motor vehicle crashes.[51] Other unintentional injuries included poisoning, drowning, fires/burns, and falls.

Over 857,392 youth aged 10 to 24 were treated in emergency rooms for injuries sustained from violence in 2008.[52]

Health Impact and Economic Burden

Injuries seriously impact the lives of children and their families. Injuries can result in long-term health problems, severe disabilities, and even death. In addition, childhood injuries cause enormous economic losses to families, employers, and society as a whole. Lost productivity is a major cost of injury. When children and adolescents are injured, parents may be forced to stay home from work to care for their child. This affects both the family's income and the employers' profit. Children, disabled from an injury, may be unable to work in the future.

Injury costs can be separated into resource and productivity costs.

- Resource costs are related to caring for injury victims and managing the aftermath of injury incidents. They are dominated by the medical costs of injuries.
- Productivity costs value wage work and housework that children and adolescents will be unable to do because of their injury, as well as the work that parents or other adults forego to care for injured children.

Injury is the leading cause of medical spending for children aged 5 to 14.[53] Over 9 million children are treated for injuries each year, and the estimated direct and indirect costs total $300 billion annually.[54] For every child injured, the total cost is more than $12,700, including $650 in medical costs, more than $1,000 in future earnings lost and nearly $11,000 in lost quality of life.[53]

Five injury causes account for nearly 80% of lifetime resource and productivity costs:[55]

- Falls.
- Motor vehicle crashes on public roads.
- Other motor vehicle or cycle crashes.
- Victims struck by or against something.
- Cutting or piercing.

Prevention Opportunities

Fortunately, most injuries among children can be prevented if parents and caretakers follow simple guidelines for each age group. For example, the consistent use of car seats in automobiles is essential for the safety of young children. Many adolescent injuries can be prevented through education and risk-reduction counseling. Employers have opportunities to educate parents on safety guidelines. Employers also have the opportunity to support injury prevention guidance in the healthcare setting through benefit design and communication.

Adolescents

As children grow into adolescents they experience rapid physical, cognitive, and emotional changes. In fact, the rate of growth in adolescence is second only to the rate of growth in infancy. Due to rapid growth and other physical and mental changes, many health-damaging behaviors (e.g., smoking) and health problems first emerge during adolescence. For these reasons, preventive healthcare is particularly important during this time period.

Well-Child Care for Adolescents

Approximately 25% to 30% of adolescents are considered at risk of adverse health outcomes based on the reported prevalence of health-damaging or risk-taking behaviors (e.g., smoking, driving without a seatbelt, binge drinking).

Annual preventive healthcare visits (well-child care) are recommended for adolescents aged 11 to 21 years.[17] Despite the recommendation that older children and adolescents should have one preventive visit per year, only 69.1% of children aged 10 to 14 years and 63.3% of children aged 15 to 17 years received a well-child visit in 2007.[56] In fact, only three quarters (73%) of adolescents see a primary care provider at least once a year for any reason.[57] Adolescents who miss preventive healthcare visits may go untreated for health and developmental problems, delay necessary immunizations, and miss opportunities to receive risk-reduction and healthy lifestyle counseling.[58, 59]

Risk-reduction and healthy lifestyle counseling is particularly important for adolescents because the effects of the behaviors adolescents practice can have a profound affect on their current and future health. Experimenting with tobacco, alcohol, or drugs, or engaging in risky sexual behaviors can create long-term or even permanent health problems.[60] Positive health behaviors such as taking precautions to prevent injury, choosing healthy foods, and getting regular exercise can help an adolescent set the stage for a lifetime of good health.

The American Medical Association (AMA), American Academy of Pediatrics (AAP), and the American Academy of Family Physicians (AAFP) all recommend that adolescents receive health education and risk-reduction counseling services during the course of well-child care. Health education counseling can help adolescents[61]:

- Prevent injuries (through seat belt use),
- Reduce their risk of heart disease and diabetes later in life (through tobacco cessation, good nutrition, and adequate exercise); and
- Prevent or reduce certain risky behaviors (such unsafe sexual behaviors).

The most serious, costly, and widespread adolescent health problems—unintended pregnancy, sexually transmitted infections, violence, suicide, unintended injuries, and the use of alcohol, tobacco, and other drugs—are potentially preventable. In fact, nearly three quarters of adolescent mortality is due to preventable causes.[57]

The Cost of Adolescent Health Problems

Each year in the United States, at least $33.5 billion is spent on preventable adolescent health problems. This estimate only includes direct medical costs associated with six adolescent health problems: unintended pregnancy, sexually-transmitted infections, alcohol and other drug use, motor vehicle injuries, other unintentional injuries, and outpatient mental health visits. When the long-term costs of preventable adolescent health problems are included, the estimate increases to over $700 billion a year.[57, 62] Long-term costs include:

- The value of lost productivity and workdays due to illness.
- Disability.
- Premature death.
- Legal costs associated with crime and risky behaviors.
- The cost of treating pelvic inflammatory disease and infertility due to sexually transmitted infections (STIs).
- Societal costs associated with adolescent pregnancy and childbirth.

These analyses do not include the costs of treating many other preventable conditions such as measles or tuberculosis; nor do they account for the costs of failing to diagnose health problems such as dental caries, asthma, depression, or diabetes until they develop into much larger, more costly problems.

Cost-effectiveness studies that document the savings associated with well-child care and clinical preventive services for adolescents are limited. However, many experts believe that risk identification and behavior change counseling have a significant effect on adolescent health and healthcare costs. For example, the American Academy of Pediatrics (AAP) estimated that it would have cost $4.3 billion to provide comprehensive clinical preventive services to all 10- to 24-year-olds in 1998. If these services could prevent just 1% of the $700 billion in preventable long-term costs explained above (i.e., $7 billion), the provision of preventive care would "save" more than $2.7 billion in healthcare costs, even after subtracting the amount required to provide preventive services to all adolescents.[62]

Adolescents: Key Health Risks

Most mental illnesses begin in childhood or adolescence. Half of all individuals who have a mental illness during their lifetime report that the onset of symptoms occurred by age 14, and three fourths report that symptoms appeared before they turned 24.[63]

Mental Health

Research studies suggest that between 14% and 20% of children and adolescents—about 1 in every 5—have a diagnosable mental, emotional, or behavioral disorder. An estimated 10% of children have a disorder severe enough to cause some form of impairment and 5% to 7% of children have a severe emotional disturbance (SED) that causes extreme functional impairment.[64]

Anxiety disorders, mood disorders (such as depression), and disruptive disorders (such as attention-deficit/hyperactivity disorder) are the most common mental or behavioral disorders among children and adolescents. Depression affects 1% to 2% of school-aged children and 3% to 8% of adolescents.[65] Eating disorders and substance abuse disorders also affect adolescents.

Children and adolescents from all backgrounds experience mental health problems. Adolescents are at greater risk for developing mental health problems when certain factors occur in their lives or environments, these factors include:

- Alcohol and other drug use.
- Discrimination.
- Emotional abuse or neglect.
- Exposure to violence.
- Frequent relocation.
- Harmful stress.
- Loss of a loved one.
- Physical abuse.
- Poverty.
- Trauma.

Eating Disorders

Teens' food choices are often influenced by social pressures to be thin, the desire to gain peer acceptance, or to assert independence from parental authority. A teenager with an eating disorder diets, exercises, and/or eats excessively as a way of coping with physical and emotional changes. The three most common types of eating disorders are anorexia, bulimia, and binge eating.

Treatment for adolescent mental health problems typically includes individual or family talk therapy (psychotherapy), and psychotropic medication. The use of psychotropic medications has dramatically increased over the past two decades, and medication has become the predominant form of treatment for both adults and children with mental illness. The rate of antidepressant use among children under the age of 18 increased 66% between 1998 and 2002.[66] Between 2002 and 2005, the prevalence continued to increase over 9% annually.[67]

Health Impact

Mental, emotional, and behavioral disorders are common problems that adversely affect the lives of millions of American children and their parents. These disorders disrupt a child's family life, decrease his/her ability to learn, and impede making friends and social contacts. Resulting problems can include:

- Poor peer relationships.
- Increased risk of substance abuse.
- Increased risk of suicide.
- Increased risk of delinquency and violence in adolescence and adulthood.

Unless properly diagnosed and consistently treated, children and adolescents with mental health and behavioral problems are at risk for more serious disorders or co-occurring disorders that can become disabling in adulthood.[68] Untreated mental illness is also a major risk factor for suicide.

Teen Suicide

Suicide, the third leading cause of death for adolescents in the United States, accounts for 11.2% of all adolescent and young adult deaths. In 2003, 4,232 youth aged 10 to 24 years took their own lives. Eighty-six percent (86%) of these suicides occurred among males, and 54% involved a firearm. For every teen suicide death, there are 10 other teen suicide attempts.[69]

Economic Burden

The economic burden of mental, emotional, and behavioral disorders among youth includes direct medical costs (e.g., prescription antidepressants, counseling visits, hospitalization); and indirect costs such as lost productivity, disability and work loss, special education, and criminal justices system costs. Mental, emotional, and behavioral disorders among youth also result in lost work time for parents. Such disorders can lead to stress, **work cut-back**, absenteeism, and in certain instances, an early exit from the workforce.

Two-thirds of young people with mental health problems do not get the help they need. Untreated mental health problems can lead to school failure, family conflicts, substance abuse, violence, and even suicide.

Each year an estimated $11.8 billion is spent on treating mental illness, behavior problems, and emotional disturbances among children aged 1 to 18 years. Roughly half of this cost ($6.9 billion) is for the treatment of adolescents aged 13 to 18 years.[70]

Children with mental, emotional, and behavioral disorders have higher medical claims than their peers, even peers with other serious health problems. For example, children with depression average $3,795 in healthcare expenditures, more than five times the amount of children without a mental illness ($754). Children with depression also use significantly more emergency room and inpatient care services than their peers.[71]

Prevention Opportunities

Mental, emotional, and behavioral disorders are most effectively treated when they are addressed early. Unfortunately, two-thirds of young people with mental health problems do not get the help they need.[72]

Employers can assist employees who are parents of children with mental, emotional, and behavioral disorders by providing robust mental health benefits; providing employee assistance services; offering education opportunities; and providing flexible work arrangements, when feasible.

To address the needs of families, employers should:

- Provide comprehensive mental health benefits, including inpatient and outpatient care, prescription medications, and specialty services for the seriously mentally ill. Mental health benefits should be equal to physical health benefits (i.e., there should not be day or visit limits on mental health services).
- Consider adding specialty mental health services for children with serious emotional disturbance, such as therapeutic nursery care.
- Consider adding early intervention services for mental health and substance abuse problems. This typically includes health plan coverage for the treatment of sub-clinical conditions and DSM-IV V-code conditions. Please refer to the Plan Benefit Model (Part 2) for additional information.
- Provide employee assistance services and educate beneficiaries on the services available. Most EAPs provide short-term counseling services. Other helpful benefits include:
  - Childcare referrals.
  - Referrals to family network or support group organizations.

- Referrals to mental health providers for ongoing specialized care.
- Consider adding information on child and adolescent mental health to existing health promotion, wellness, and health education programs. Discussing mental health issues reduces stigma, helps link families with care services, and provides support for families struggling with mental health problems. For example, find a way to recognize national mental health and substance abuse awareness days and months (i.e., National Depression Screening Day or National Alcohol & Drug Addiction Recovery Month).

Substance Use and Abuse

Substance abuse refers to the abuse of alcohol, illicit or prescription drugs, or both. Approximately 22.2 million Americans aged 12 years and above experienced a substance abuse or substance dependence disorder in 2008. That same year, 1.9 million youth aged 12 to 17 years had a drug or alcohol problem severe enough to require specialized treatment; yet only 143,000 (7.4%) received treatment.[73]

Substance	Rate of Use by Age, 2005			
	12-13 years	14-15 years	16-17 years	18-20 years
Alcohol use	4.2%	15.1%	30.1%	51.1%
Binge drinking	2.0%	8.0%	19.7%	36.1%

Source: Substance Abuse and Mental Health Services Administration. *Results From the 2008 National Survey on Drug Use and Health: National Findings.* Office of Applied Studies, NSDUH Series H-36, DHHS Publication No. SMA 09-4434. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2009.

Health Impact

Substance abuse contributes to a wide range of health problems, including HIV, hepatitis C, suicide and depression, motor vehicle-related injuries, birth defects, and many other problems. For adolescents, it is also a particular risk factor associated with sexual activity and unintended pregnancy. Due to their developing bodies and brains, children and adolescents are also particularly susceptible to some of the negative effects of alcohol and substance abuse.

- Alcohol use contributes to the three leading causes of death for 15- to 24-year-olds: motor vehicle-crashes, homicides, and suicides.[74]
- Alcohol abuse is the third leading preventable cause of death in the United States,[75] and it is a factor in approximately one-third of all deaths from motor vehicle crashes.[76] In 2008, an estimated 7.2% of 16- to 17-year-olds, 16.7% of 18- to 20-year-olds, and 26.1% of 21- to 25-year-olds reported driving under the influence of alcohol at least once during the past year. Males were nearly twice as likely as females (16.0% vs. 9.0%) to report drunk driving.[73]

Substance	Rate of Use by Age, 2003	
	12-17 years	18-20 years
Any illicit drug	11.2%	23.3%
Marijuana	7.9%	
Prescription drugs	4.0%	
Inhalants	1.3%	
Hallucinogens	1.0%	
Cocaine	0.6%	

Source: Substance Abuse and Mental Health Services Administration. *Results From the 2008 National Survey on Drug Use and Health: National Findings.* Office of Applied Studies, NSDUH Series H-36, DHHS Publication No. SMA 09-4434. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2009.

Mental illness and substance abuse are intertwined. Many people with undiagnosed mental or emotional disorders 'self-medicate' with alcohol or drugs in order to control or escape their thoughts or feelings.[77-79] Some researchers and clinicians also believe that mental health and substance abuse problems have common underlying genetic and environmental causes.[77]

Economic Burden

The economic burden of adolescent substance abuse is significant for employers, families, and communities. Employers pay for the direct medical costs associated with substance abuse; they also bear the lost productivity costs that result when parents of substance-abusing children require care. Much of the direct cost of adolescent substance abuse results from injuries. For example, in 2008, 132,254 alcohol-related emergency department visits were made by patients aged 12 to 20 years.[81]

Substance Use: Quick Facts[80]

- Alcohol is the most commonly used substance, and marijuana is the most widely-used illicit drug, among adolescents.
- Substance use more than doubles between 8th grade and 12th grade.
- One in four twelfth graders report binge drinking and 12% smoke cigarettes daily.

Prevention Opportunities

Employers can help address adolescent drinking and drug use through benefit design, employee education, and support services.

- Employers should provide substance abuse treatment benefits for all beneficiaries, including inpatient detoxification and outpatient drug and alcohol programs.
- Employee education can help parents learn how to raise a drug-free child. EAP, health promotion, or wellness programs can provide a venue for speaking to employees about healthy parenting techniques. Research shows that parents and siblings are a major influence in a teen's decision to start or increase drug or alcohol use. In fact, teen perceptions of immorality, parental disapproval, and harm to health are far more powerful deterrents to teen smoking, drinking, and drug use than legal restrictions on the purchase of cigarettes and alcohol, or the illegality of using drugs like marijuana, LSD, cocaine, and heroin.[82]
- Existing EAP services can help employees cope with the stress of adolescent substance abuse. Employers should consider working with their EAP to better communicate existing services (e.g., legal advice, family counseling services) that are available to help families struggling with substance abuse.
- If support services aren't feasible internally, consider developing a list of community resources that could help employees cope with substance abuse and the effects it has on families.

Obesity and Physical Activity

Obesity is an epidemic in the United States: in the past 20 years, the proportion of children classified as obese more than doubled, from 6.9% in 1980 to 17% in 2006. The rate among adolescents aged 12 to 19 more than tripled, increasing from 5% to 17.6% in that time.[83] Adolescents are considered overweight when their BMI is at or above the 95th percentile of a sex-specific age/growth chart.

Poor eating habits during the teen years may lead to both short- and long-term health consequences including obesity, osteoporosis, and sexual maturation delays.

Health Impact

Poor eating habits during the teen years may lead to both short- and long-term health consequences including obesity, osteoporosis, and sexual maturation delays.[84] Sustained obesity puts adolescents and young adults at high risk for several chronic diseases including hypertension, type II diabetes, and cardiovascular disease.

Economic Burden

The economic burden of obesity in the United States is substantial. In 2006, the average health care expenditure for the obese population was $5,148, compared to $3,636 for the overweight population and $3,315 for the normal weight population. The annual cost of obesity was over $300 billion in that year.[85]

Prevention Opportunities

Employers have many opportunities to help their employees raise healthy-weight children. Some ways your company can address child and adolescent obesity are listed below.

Education and Health Promotion[86]

- The most important overweight prevention for babies and toddlers is breastfeeding.[87] Include the benefits of breastfeeding in prenatal programs and support new mothers breastfeeding when they return to work.
- Encourage employees to engage in healthier eating habits and more active lifestyles. When parents set good examples, it will be easier for children to reach their health goals.
- Increase awareness of unhealthy behaviors and environmental factors that can stimulate overeating. Provide information on healthy eating habits that can help parents monitor and control the type and amount of food children are eating.
- Distribute nutrition and physical activity educational materials during open enrollment.
- Reimburse employees for gym memberships or facilitate participation in on-site programs
- Offer family-centered weight loss and maintenance classes.
- Fund or provide subsidies through health reimbursement accounts (HRAs) for employees who achieve weight goals.

For more information on tailoring health promotion and disease management programs to meet the needs of children and adolescents, please refer to Fact Sheet #2 in Part 5.

Health Benefit Coverage[86]

- Provide coverage for obesity screening, counseling, and treatment.
- Provide coverage for nutrition counseling.
- Ensure that network providers screen children and adolescents for overweight and obesity during well-child care. Screening can help identify children who are at risk for becoming overweight and can help identify those who may need further assessment or treatment for a weight problem.

Unintended Pregnancy

In the United States, approximately 7% of women aged 15 to 19 years become pregnant each year.[88] Over two-thirds of pregnancies among women under age 18, and over half of pregnancies among women ages 18 and 19, are unintended, meaning that they are either unwanted or mistimed.[89] Despite decreasing rates, more than three in 10 adolescent girls become pregnant at least once before reaching 20 years of age.[90]

Health Impact

Approximately 57% of adolescent pregnancies end in live births, 27% end in abortion, and 16% result in miscarriage or stillbirth.[91] Pregnancies that are carried to term are at-risk for poor outcomes due to a variety of factors, including:

- **Age.** Very young girls are at risk for a host of pregnancy-related complications.
- **Baseline health status.** Women with unintended pregnancies are less likely to practice healthy preconception behaviors (e.g., eliminating alcohol use, taking folic acid) and are thus at an increased risk for birth defects and other problems.
- **Co-occurring risks.** Girls who experience an unintended pregnancy are also at a higher risk of substance abuse and STIs, both of which are risk factors for poor pregnancy outcomes.

Economic Burden

The social and economic consequences of teenage pregnancy are substantial. In 2004, teen childbearing costs United States taxpayers over $9 billion.[92] Induced and spontaneous abortions among teenagers cost more than $180 million each year.[93]

Unplanned pregnancies, compared to planned pregnancies, often result in higher total medical claims cost because women whose pregnancies are unintended are less likely to take folic acid supplements or to breastfeed, and are more likely to continue smoking during pregnancy. The poor health outcomes associated with these behaviors lead to higher obstetric claims.[94, 95]

Parents may also lose work time in order to care for their pregnant child and/or their grandchild after it is born. The stress of an unplanned adolescent pregnancy may also reduce an employee's productivity, and lead to stress or depression.

Prevention Opportunities

In order to reduce unintended pregnancy, employers should provide comprehensive contraception coverage for employees and dependents. Employers should also consider removing cost barriers by eliminating cost-sharing requirements on contraceptive medications, devices, procedures, and office

visits. Expanding coverage and removing cost barriers is particularly important for adolescents because many can not afford to pay for contraceptives out-of-pocket.

All methods of contraception are cost-saving from the societal perspective and most are also cost-saving from the private-payer perspective. For example, after one year of use, private-sector savings from adolescent contraceptive use range from $308 (implant) to $946 (male condom).[93]

Sexually Transmitted Infections

Each year, approximately 4 million teens in the United States—one in four sexually active teens—get a sexually transmitted infection (STI).[96] Many STI's can be cured; others have treatable symptoms, but cannot be cured.

- Genital chlamydia is the most common bacterial STI in the United States, and 46% of newly reported infections occur in sexually active 15- to 19-year-old girls.[97]
- Human papillomavirus (HPV), previously termed genital or venereal warts, is a sexually transmitted viral infection. Treatment of genital warts does not eradicate the disease. An estimated 24 million Americans are infected with HPV, and as many as 1 million new infections occur annually. Genital HPV infections are the most common sexually-transmitted diseases in the United States, and HPV types 16 and 18 are the cause of about 70 percent of cervical cancers worldwide. There will be an estimated 11,270 new cases and 4,070 deaths from cervical cancer in the United States during 2009, according to the National Cancer Institute at the National Institutes of Health. A vaccine to prevent HPV was recently released in the United States and is recommended for all women aged 9 to 26 years.[98]
- Other STIs include: gonnorrhea, syphilis, herpes simplex virus, and hepatitis B.

The USPSTF and the CDC recommend that all sexually active women under the age of 24 be screened for chlamydia annually.[101] Yet seven out 10 sexually active 16 to 20-year-old females enrolled in managed care plans did *not* receive a test for chlamydia or other genital infection in the past year.[96]

Health Impact

STIs can cause pain and discomfort, and some can lead to long-term health problems. Young women who go untreated for an STI are 2 to 5 times more vulnerable to long-term diseases such as sterility and certain cancers that may not appear until years after the initial infection.[99] Infection with some STIs also increases a person's susceptibility to other STIs, including HIV.

Economic Burden

In 2000, 9 million new STI infections occurred among adolescents and young adults; these infections resulted in $6.5 billion in direct healthcare costs. HIV and HPV were the most costly STIs, and accounted for 90% of the total economic burden of STIs.[100]

Prevention Opportunities

The U.S. Preventive Services Task Force (USPSTF) recommends that clinicians routinely screen *all* sexually active females age 24 and younger for chlamydia (as well as at-risk women over age 24 who are pregnant)[101], all sexually active at-risk women for gonorrhea, and all men and women at risk for HIV and syphilis.[102] The Centers for Disease Control and Prevention (CDC) recommends that all people between the ages of 13 and 64 be screened at least once during their lifetime for HIV.[103]

Screening for STIs is particularly important because many STIs do not cause detectable symptoms until the disease is advanced. Despite the importance of screening, screening rates remain unacceptably low: only one-third to one-half of primary care physicians report regularly screening sexually-active young women for STIs.[104-106]

In general, screening at-risk adolescents and adults for STIs is either cost-saving or cost-effective.[102]

Employers can support STI prevention, early detection, and treatment by offering robust clinical preventive service benefits, reducing cost barriers, and educating beneficiaries on the importance of sexual health.

- Healthcare benefits should include primary care counseling to prevent STIs, screening to detect STIs, and treatment.
- Employers should instruct their health plans to actively educate providers on the importance of screening at-risk adolescents. The benefits of screening should be regularly communicated to plan participants.

Children with Special Health Care Needs

Children with special health care needs (CSHCN) are children "who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally."[2] CSHCN have a wide range of physical, mental, emotional, or behavioral disorders including **congenital anomalies**, severe physical disabilities, complex organ system disease such as cystic fibrosis, sickle cell anemia; and more common conditions, including depression and severe asthma.

The majority of children with special needs (61.6%) are covered by employer-sponsored health plans.[108]

Approximately 13% to 15% of children in the United States have special health care needs.[107] One in five households with children in the United States includes at least one child with a special health care need and, in any given company, it is estimated that 8.6% of employees care for a child with a special need.[14]

The prevalence of special health care needs increases with age. Only 8% of children under the age of 5 years have an identified special need, whereas 14.6% of children aged 6 to 11 years and 15.8% of adolescents aged 12 to 17 years have a special need.[2]

Healthcare Costs

In 2000, national healthcare expenditures for children and adolescents totaled $67 billion. Although children with special health care needs make up less than 20% of the population, they account for 41% of all child health expenditures.[6] In fact, medical expenses for children with special needs are over double the cost of children without chronic problems.[6]

Unique Problems and Concerns

Children with special health care needs are an important part of an employer's beneficiary population because they:

- Experience complex, chronic, and severe health problems, which can be difficult to manage.
- Use more healthcare services than other children and thus have higher overall healthcare expenditures.
- Experience more sick days and require additional office visits and hospitalizations than other children, which results in lost productivity and absenteeism for their parents.

Healthcare Concerns

Access to adequate health care is critical for families caring for a child with a special need. By definition, CSHCN require healthcare services of a different type, intensity, or scope than their peers. Children with chronic conditions enrolled in employer-sponsored health coverage programs typically face high deductibles and cost-sharing (due to their increased service use). Many also face annual or lifetime limits on their benefits. Further, many traditional employer plans use a definition of "medical necessity" that excludes treatment for congenital anomalies, rehabilitation for developmental delays, and other services critical for CSHCN.[109] These barriers prevent children with special needs from accessing necessary care. In order to maximize the range of covered services and minimize out-of-pocket costs, some families of CSHCN pursue a strategy of double coverage, or joint private-public coverage.[14]

The Maternal and Child Health Benefits Advisory Board developed a new definition of "medical necessity" that addresses the unique needs of children, including those with special needs. For more information, please refer to the Plan Implementaion Guidance Document in Part 2.

Work-Life Balance Concerns

Most employed parents worry at times about their children, and thus are sometimes less efficient on the job. However, employed parents of children who are very ill or disabled deal with constant and often intensive stress, both at work and at home. Such pressures can limit parents in their ability to function at work. In extreme cases, parents may be forced to cut back their hours or leave the workforce altogether in order to provide full-time care for their child.

Some of the stresses that cause parents to lose productive work-time, cut back on their hours, or leave the workforce include the following[14]:

- Physically caring for a sick child, which can cause exhaustion, illness, and higher medical claims.
- Worrying about the well-being of the child, which may result in a mental health problem such as depression.
- Finding quality childcare services.

- Making numerous telephone calls to healthcare providers for appointments or guidance; taking the child to appointments with care providers and for various procedures.
- Consulting with the child's teachers about the child's educational needs.
- Assisting the child through hospitalizations and following discharge.
- Working with other family members to provide the child with as much support as possible.

Parents of children with chronic health conditions experience greater financial hardship, reduced employment, poorer mental health, and increased stress compared to the parents of children without special needs.[14]

The Business Case for Work/Life Benefits

Research has shown that work/life supports on the job are related to positive work outcomes for parents of children with special needs. Positive work outcomes include: increased job satisfaction, a stronger commitment to the employer, and improved retention.[14]

Key components of a supportive workplace for employees with CSHCN include an understanding and supportive supervisor, comprehensive health coverage, work schedule flexibility, an employee assistance program (EAP), and access to childcare.[14]

Health and work/life benefits can assist employees dealing with special needs issues. Benefits important to employees who have children with special needs include[14]:

- Comprehensive and affordable health insurance.
- Flexible work arrangements and use of leave time.
- Supportive work environments.
- Clear and accessible information about company benefits and how to access them.
- Information about community resources and services and public benefit programs.

Employer Actions[8, 14, 110]

What can employers do to assist employees who care for children with special needs? Below is a summary of some important steps that companies can take to support families with CSHCN.

Provide comprehensive healthcare benefits:

- Services that may be particularly important to CSHCN include:
  - Durable medical equipment and medical foods.
  - Home health services.
  - Mental health services.
  - Dental care.
  - Vision care.
  - Laboratory and diagnostic testing.
  - Prescription drugs.

Supporting families caring for CSHCN can be accomplished without adding new benefits. Programs and benefits exist in many companies that can be adapted for families at no cost, or very low cost—such as flexible work arrangements.

  - Educational testing/screening and interventions.
- Review your company's cost-sharing, flex-benefit, and case management policies and programs and make sure they support children with special health care needs. If cost barriers are a problem in your population, consider reducing or eliminating copays/coinsurance on essential care services, prescription drugs, etc.
- If your company doesn't already offer child-tailored disease management programs, ask your vendors how they can better address the needs of children and adolescents in existing programs.

Cleary communicate benefits and solicit input from employees:

- Have health plan customer service agents or member services representatives teach employees with children who are ill about healthcare benefits that apply specifically to their situation.
- Provide all employees with information on relevant benefits such as FMLA, sick leave policies, and healthcare benefits.
- Establish an employee resource or a company-wide diversity council that regularly meets to give input on policies and benefits.
- Consider including parents of special needs children in benefit design discussions for particular topics (e.g., autism benefits).

Provide flexible work environments:

Flexibility is essential for employees coping with the unpredictability of multiple medical conditions and numerous healthcare appointments. Flexibility is possible in most jobs; however, it may require employees and managers to work together to find the right solution.

- Develop policies that allow emergency time off, shift trades, and flexible hours.
- Allow employees to use paid time off (PTO), paid sick time, or incidental absence days to care for their child.
- When flexible work arrangements are possible, allow employees with ill children to work from home or even from a child's hospital room if necessary.
- Start a childcare program at the workplace, if feasible. Remember that childcare programs can reduce job turnover by 37% to 60%. If your company already provides on-site childcare, consider offering special needs education and training to company-sponsored childcare staff.
- Provide employees with a quiet room they can use during breaks to contact healthcare providers, teachers, and childcare providers.

Tailor EAP and health promotion programs:

- Provide childcare resource and referral services to employees either through an internal or outsourced EAP or partnership with a nonprofit referral agency in the community. Ensure that your company's resource and referral vendor offers access to a childcare database of providers with special needs expertise.
- Consider adding special needs issues to existing health promotion and wellness programs.
- Provide information to employees on your State's Title V Children with Special Health Care Needs Program.

Educate management on the issue:

- Provide executives, supervisors, and human resources staff with information about (a) CSHCN; (b) the physical and emotional impact of caregiving on parents, and (c) the special problems which employees with very sick children face as they juggle home and work responsibilities.
- Orient new managers and supervisors about the importance of assisting employees with children who have special needs.

Provide education and support, when feasible:

- Create opportunities for employees who have children with special needs to gain support from each other.
- Provide employees with information on local support groups for parents with special needs children. If there is sufficient demand at the worksite, consider launching a support group by providing meeting space at a company location.
- Conduct seminars in the workplace (after hours) for families of children with special needs on topics such as financial planning, finding appropriate childcare, and managing stress, or refer families to community resources.

Summary Points

- Well-child care is preventive healthcare for children and adolescents. One of the primary purposes of well-child care is to identify children affected by a physical, mental, or developmental problem as early in life as possible.
- All children face health risks; yet, many child health problems are preventable.
- Child and adolescent illness and injury are a major cause of employee absence and lost productivity. Employers have opportunities to reduce preventable health problems through benefit design, communication, and employee education.
- Children with special health care needs are an important part of an employer's beneficiary population. These children experience complex, chronic, and severe health problems, which can be difficult to manage; they use more healthcare services than other children and thus have higher overall healthcare expenditures; and they experience more sick days than other children, which results in lost productivity and absenteeism for their parents.
- Employees with sick children who receive help and support from their employers are usually better able to concentrate on their jobs, and remain with their companies longer. Employee retention is a key driver of customer retention, which in turn is a key driver of company growth and profits.
- Improving the health of children will likely benefit an employer's bottom line by reducing both direct healthcare costs and indirect costs, such as lost productivity.

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4 Healthy Pregnancy and Healthy Children: Opportunities and Challenges for Employers

Primary Care and the Medical Home: Promoting Health, Preventing Disease, and Reducing Cost

This document provides an overview of the importance of primary care services; the medical home model; and guidance on how employers can support both through beneficiary education, benefit design, and reimbursement practices.

Introduction

The previous issue briefs, *The Business Case for Promoting Healthy Pregnancy* and *The Business Case for Protecting and Promoting Child and Adolescent Health* provided an overview of the health problems women and children face, and the resulting employer costs. Employers have the opportunity to address these problems in a number of ways. Part 2 recommended benefit design changes, Part 3 included tools for healthcare strategy-setting, and Part 5 provides information on health promotion programs, health education campaigns, and incentives. Investing in primary care and the primary care delivery system is another proven strategy.

The Medical Home

Many employers are focusing on preventive health in order to promote the health of beneficiaries and prevent costs that occur when beneficiaries develop chronic conditions or suffer preventable injuries. Primary care providers are essential in the prevention, detection, and management of chronic diseases and injuries: they provide continuous and comprehensive care, and are the entry point to the healthcare system.

Approximately 90% of children in the United States have health coverage (public or private), yet less than 80% of insured children have a regular source of care.[1]

Primary care providers are especially important in the care of children. Well-child care, the foundation of health care for children, requires multiple visits for screenings, counseling, anticipatory guidance, immunizations, and other services. The American Academy of Pediatrics (AAP) recommends that children receive 26 well-child visits from birth to age 21.[2] Ensuring a child is up-to-date on preventive care can be difficult, particularly when a child has special needs, complex medical conditions, or multiple providers.

Fragmentation in care for children is common, and often due to:

- Change in their parent's employment.
- Change in health plan options, for example a change in plan administrators or network composition.
- Change in levels of coverage, for example when a parent opts to add or eliminate dental coverage.

In these circumstances, beneficiaries may be forced to choose a different care provider. As a result, their medical records can become scattered and the helpful provider-patient rapport is truncated.

The need for continuity of care and a single source of information about a child's medical history led to the idea of the medical home. The medical home concept was pioneered by the American Academy of Pediatrics (AAP) in 1967. It was originally intended to provide children with special health care needs care that was accessible, continuous, comprehensive, family centered, coordinated, compassionate, and culturally effective.[3] Over time, the concept was applied to all children and then to adults. Today, the term "**medical home**" refers to a partnership between a patient, his or her family, and their primary healthcare provider.[4]

A medical home is not a building, house, or hospital, but rather an approach to providing comprehensive primary care. A medical home is defined as primary care that is accessible, continuous, comprehensive, family centered, coordinated, compassionate, and culturally effective.[5]

Principles of the Patient-Centered Medical Home (Supported by the American Academy of Family Physicians and the American College of Physicians)[6]

Personal physician - each patient has an ongoing relationship with a personal physician trained to provide first contact, and continuous and comprehensive care.

Physician directed medical practice – the personal physician leads a team of individuals at the practice level who collectively take responsibility for the ongoing care of patients.

Whole person orientation – the personal physician is responsible for providing for all the patient's health care needs or arranging care with other qualified professionals.

Care is coordinated and/or integrated across all elements of the complex healthcare system (e.g., subspecialty care, hospitals, nursing homes) and the patient's community (e.g., family, public and private community-based services). Care is facilitated by registries, information technology, and health information.

Quality and safety are hallmarks of the medical home:

- Evidence-based medicine and clinical decision-support tools guide decision-making.
- Physicians in the practice accept accountability for continuous quality improvement through voluntary engagement in performance measurement and improvement, patient feedback is obtained and used, and practices go through a voluntary recognition process to demonstrate that they have the capabilities to provide patient centered services consistent with the medical home model.
- Information technology is utilized appropriately to support optimal patient care, performance measurement, patient education, and enhanced communication.

Enhanced access to care is available through systems such as open scheduling, expanded hours, and new options for communication between patients, their personal physician, and practice staff.

Payment appropriately recognizes the added value provided to patients who have a patient-centered medical home. The payment structure should be based on the following framework:

- It should reflect the value of physician and non-physician staff work that falls outside of the face-to-face visit associated with patient-centered care management.
- It should pay for services associated with coordination of care both within a given practice and between consultants, ancillary providers, and community resources.
- It should support adoption and use of health information technology for quality improvement.
- It should support provision of enhanced communication access such as secure e-mail and telephone consultation.
- It should recognize the value of physician work associated with remote monitoring of clinical data using technology.
- It should allow for separate fee-for-service payments for face-to-face visits. (Payments for care management services that fall outside of the face-to-face visit, as described above, should not result in a reduction in the payments for face-to-face visits).
- It should recognize case mix differences in the patient population being treated within the practice.
- It should allow physicians to share in savings from reduced hospitalizations associated with physician-guided care management in the office setting.
- It should allow for additional payments for achieving measurable and continuous quality improvement.

The Business Group Strongly Supports Primary Care

The Board of Directors of the National Business Group on Health strongly supports:

- Primary care as foundational to a high-quality, efficient, and effective healthcare delivery system.
- Payment policies that recognize the value of primary care and primary care like services.
- The concept of an "advanced medical home", as appropriate.
- Growth in health information technology (HIT) to support and enable efficiency, quality, and safety in practices of all sizes.
- Educational and loan programs that encourage physicians and other health professionals to work in primary care.

As a Nation, and as employers making payment decisions and pressing for needed payment reform under Medicare, Medicaid, and SCHIP, the Business Group believes we should:

- Direct resources to disease prevention, health promotion, and needed primary care;
- Ensure the availability of portable, personal health records;
- Support reforms, tools, and resources to enable and encourage people to have a medical home; and
- Target capital resources to underserved areas and truly needed facilities and equipment.

Why Primary Care is Important

Primary care is defined as integrated and accessible care from physicians, nurse practitioners, or other qualified providers who are accountable for a wide range of personal health care needs, who have a relationship with patients, and practice in the context of the family and community.[7]

Despite the United States having the highest per capita health expenditures in the world, it ranks at the bottom or near bottom of a wide array of health measures. The United States spends 40% more per capita on health care than any other Western industrialized nation.[11]

Despite the United States having the highest per capita health expenditures in the world, it ranks at the bottom or near bottom of a wide array of health measures.[8] One reason for our low ranking is a lack of emphasis on primary care services. Countries that emphasize primary care (namely Denmark, Finland, Netherlands, Spain, and the United Kingdom) have better health outcomes, such as reduced rates of low birthweight, neonatal mortality, child mortality, and injury-related deaths.[8] Countries with a stronger orientation towards primary care also have fewer years of life lost (a reduced rate of premature mortality); and a lower incidence of influenza, pneumonia, asthma, bronchitis, and heart disease.[9] The lowered rate of illness means lower healthcare expenditures. Even in the United States, cities that have a higher-than-average proportion of primary care practices experience lower in- and out-patient care costs.[10]

Countries that support and incent primary care services have lower mortality rates, fewer years of life lost due to preventable causes, and lower per capita healthcare expenditures.

Case Examples

Developmental Screening

Developmental screening (conducted during routine well-child visits) is an important preventive service.[12] Medical homes, as compared to other types of care delivery systems, improve the delivery of screening. The American Academy of Pediatrics (AAP) released a policy statement in 2006 recommending that providers screen children for developmental delays at 9, 18, and 30 months and evaluate, diagnose, and treat children who screen positive for problems.[12] The identification of developmental delays allows for early intervention, which benefits children and their families.[12] Medical homes that utilize electronic medical records are able to (a) effectively track a child's progress over time and identify symptom patterns, (b) improve collaboration among multiple providers, and (c) aid providers and families in making future appointments and managing referrals to specialists.[12]

Immunizations

Ensuring that children are up-to-date on their immunizations is vital. By the age of 2 most children will require 27 immunizations, and by age 18 most children will have received 35 vaccinations.[13] Unfortunately, many children miss or delay immunizations leaving them vulnerable to serious disease for a period of time. Research shows that children in medical homes receive more on-time vaccinations than children seen in other care delivery models.[14] Medical homes promote timeliness by keeping up-to-date records and reminding parents of their children's immunization needs.

Adverse Drug Events

According to the Agency for Healthcare Research and Quality (AHRQ), over 770,000 people are injured or die each year in hospitals from adverse drug events.[15] Patients who experience an adverse drug reaction spend an additional 8 to 12 days longer in the hospital and cost an extra $16,000 to $24,000 compared to those who received high-quality care. Nationally, the hospital cost of medical errors totals between $1.56 and $5.6 billion each year.[15] Since the majority of drug-related medical errors occur in the ordering and administration stages, 28% to 95% of adverse drug events can be prevented by using computerized systems.[15] A computerized medical home houses a patient's information in its system and if a drug is ordered that the patient is allergic to or that might interact with another medication, the provider or pharmacist is alerted before the patient is harmed.[16] E-prescribing systems reduce the amount of transcription errors by eliminating illegible prescriptions; they can also calculate dosages based on the patient's weight and height (a point of particular importance for children) and pregnancy status.[17] Many of these systems can also help reduce drug costs and increase compliance to purchasers' preferred drug prescription programs by identifying when a prescribed medicine is covered by the patient's pharmacy plan and if a generic is available.[17]

Employer Actions

To encourage and support the medical home concept, employers should consider changing their benefit design and reimbursement practices. Employers should also educate their beneficiaries about the benefits of care continuity.

Benefit Design

- Strive to create a stable network of primary care providers, including pediatricians, family physicians, pediatric and family nurse practitioners, and general practitioners. Also strive for continuity among providers who deliver primary care like services such as prenatal care (obstetrician-gynecologists), and mental health services. Changes in coverage and changes in a plan's provider network can interrupt continuous care.
- Direct health plan administrators to select providers for their networks who practice within the medical home model.
- Provide incentives for beneficiaries and providers to foster stable relationships.

Education and Communication

- Provide information to beneficiaries about the importance of primary care, for example:
  - Provide employees who are parents with immunization and well-child care schedules, and a list of zero-cost preventive services.
  - Instruct your health plans to provide beneficiaries with information about selecting a qualified primary care provider in their area. Ask the plan to highlight providers that offer medical-home-modeled services.
- Help beneficiaries choose quality health care, by providing tools that will allow them to:
  - Select a provider who has been given high ratings in care quality, has adequate training, values and promotes preventive services, and works with patients to make healthcare decisions.[18]
  - Understand how to choose treatments based on their diagnosis, the benefits and risks of the intervention, recent scientific evidence, and cost.[18]
  - Find a suitable hospital that is accredited, rated highly by State and local organizations, has experienced physicians and nurses, and monitors and improves the quality of care it provides.[18]

Reimbursement

Instruct plan administrators to provide better reimbursement for primary care services. Too few young physicians are entering the primary care field and many established physicians are retiring as the trend towards specialty care devalues their care and lowers their profits.[19] Improving reimbursements is one way to encourage physicians to start or continue in primary care practices. Some insurance companies and health plan administrators use the "pay for performance" system, which aims to enhance the quality of care patients receive by rewarding primary care providers for the delivery of preventive care though bonuses or reimbursements.[20]

Summary Points

- Primary care providers are essential in the prevention, detection, and management of chronic diseases and injuries: they provide continuous and comprehensive care, and are the entry point to the healthcare system.
- Preventive health care is critical for children and adolescents and is best provided in a medical home. Children who receive well-child care in a medical home are more likely to receive on-time immunizations, more likely to be screened and treated for developmental problems, and less likely to suffer an adverse drug event than their peers treated in different models.
- Countries that support and incent primary care services have lower mortality rates, fewer years of life lost due to preventable causes, and lower per capita healthcare expenditures.
- To encourage and support the medical home concept, employers should consider changing their benefit design and reimbursement practices. Employers should also educate their beneficiaries about the benefits of care continuity.

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4 Healthy Pregnancy and Healthy Children: Opportunities and Challenges for Employers

A Case Study on Employee Engagement: Marriott International, Inc.

Company Background

Marriott International Inc., is a leading lodging company with nearly 2,900 lodging properties in the United States and 68 countries around the world. Its heritage can be traced to a root beer stand opened in Washington, DC in 1927.

As a leader in the competitive hospitality industry, Marriott understands the importance of employee health and productivity. Marriott believes its associates are its greatest asset; and as a leader in the service industry, Marriott knows that its success rests upon engaging those associates. Marriott's robust health benefits package seeks to engage associates by meeting the needs of their families. Jill Berger, Vice President of Marriott's Health and Welfare benefits, explains: "Health benefits are a very important part of our compensation package to attract and retain talent. One of our core values is if we take care of our associates, they will take care of our guests."

"We have learned that good health leads to better productivity on the job. We want to encourage and support our associates and their families in getting the essential care they need."
- Rebecca Main,
Director, Benefit Plans

Marriott provides medical, prescription drug, vision, and dental coverage to 150,000 covered associates and dependents in the United States. Approximately 80% of benefits-eligible associates are enrolled in Marriott's medical plans, and most associates have a choice between a PPO/POS and HMO. Most of Marriott's medical plans are self-insured.

Education and Communication: The First Steps Toward Engagement

Evidence shows that beneficiaries with chronic disease benefit from continuous care delivered in a medical home.

Marriott knows that health education and communication are critical. Effective health communication is particularly important because Marriott's associates speak many different languages and come from diverse backgrounds. "Continuity of care is also a challenge, as too often people wait to get care until they experience symptoms of an established disease" notes Berger. "We'd like to see more of our associates develop a relationship with a doctor," explained Main, "then the point of entry into the healthcare system would not be the ER."

Know Your Numbers

To educate beneficiaries on the importance of preventive care, Marriott designed a preventive health education and communication campaign: "Know Your Numbers." The program, launched in 2007, encourages all beneficiaries to visit a primary care provider and be assessed for four key health indicators: glucose level, blood pressure, lipids profile, and body mass index (BMI). These four numbers give a snapshot of a person's health status and can predict his/her risk of diabetes, cardiovascular disease, and obesity.

Six percent (6%) of beneficiaries in Marriott's self-insured plans generate 60% of claims costs. Cardiovascular disease and diabetes are a large part of these claims.

Marriott developed the Know Your Numbers program in order to encourage beneficiaries to take charge of their health, know their health risks, and address chronic conditions as early as possible. The program has three objectives:

1. Educate beneficiaries on the importance of health assessment;
2. Motivate beneficiaries to visit a provider for preventive care; and
3. Encourage beneficiaries to form a *relationship* with a primary care provider.

For more information on health literacy and effective health communication techniques, refer to Fact Sheet #1 in Part 5.

The program was championed by the benefits department at Marriott's corporate headquarters in Washington, DC. Beneficiaries were mailed an informational postcard and brochure, and Marriott's newsletter also included stories on the program. To ensure that program materials were consumer-friendly, Marriott followed its health literacy guidelines:

- Health communications are simple and actionable and are specifically tailored for people without a background in health care.
- Support from on-site HR professionals during annual enrollment.
- Access to web-based portals to help associates understand benefits materials and plan variations during annual enrollment.

Removing Barriers to Care

The Know Your Numbers campaign is based on knowledge transfer. Marriott, with a keen understanding of barriers to care, knew it needed to address access and cost issues if the program were to succeed in getting beneficiaries to the doctor. To remove potential cost barriers, Marriott eliminated copays on all preventive services effective January 1, 2007, where it could. Marriott's health plans decide which preventive services qualify for the zero cost-sharing policy; each year they review the U.S. Preventive Services Task Force (USPSTF) recommendations and American Medical Association (AMA) guidelines on clinical preventive services and set their reimbursement algorithms accordingly.

Results

Because the program is so new, reliable outcome data is not yet available. In a few years, Marriott expects its claims data will show that the program led to an:

- Increase in preventive care (office visits, procedures, and medications/immunizations);
- Decrease in ER visits; and an
- Increase in the number of associates who select a primary care provider and see that provider at least once per year.

Employee feedback has been positive. Associates like the way Marriott has communicated the program; they feel it is easy to understand, straightforward, and actionable. They particularly like the case-study approach that features the stories of real people who went to the doctor, identified a risk or problem, and prevented serious illness through relatively simple lifestyle changes.

Unanticipated Challenges

As could be expected with any complex benefit change, Marriott encountered challenges in administration and implementation. Jill Berger notes, "Administering the program has been a bit challenging. For years, copays went up and up and now they are going away. It's a culture change, not just for us and for our associates, but for the health plans and providers as well."

Marriott instructs its beneficiaries on what to say and do when a provider balks at the $0-copay for preventive services. Aetna, one of the first Marriott-sponsored plans to promote the Know Your Numbers program, redesigned their standard beneficiary identification card. "Preventive service office visit copay: $0" is clearly marked on the front of the card. Marriott hopes that as more employers adopt zero cost-sharing policies for preventive care, health plans and providers can resolve the administrative hurdles.

Cost-Effectiveness

Marriott considered cost-savings and cost-offsets in its decision to launch the Know Your Numbers program and the zero cost-sharing policy, and expects to see a positive return on investment in just a few years time.

"We know that if we can get more associates to engage in preventive care and form a relationship with a primary care provider, we will improve quality and save money for both the company and the associate."
- Jill Berger, Vice President, Health and Welfare

Next on the Horizon

The Know Your Numbers program is just one of many innovative benefit programs at Marriott.

- In November, 2006, Marriott released a comprehensive, free smoking cessation program for associates and dependents.
- In 2007, Marriott introduced a personal health record (PHR) through ActiveHealth Management for beneficiaries in all of its self-insured plans. The PHR will be promoted during this year's annual enrollment.

Next, Marriott hopes to expand its value-based purchasing strategies. Currently, Marriott offers copay reductions for certain drugs for highly prevalent chronic conditions such as hypertension and diabetes.

Advice from Marriott

Marriott's programs address the unique characteristics of their population. Yet the goals of health communication, employee engagement, and quality are universal. Marriott suggests that employers interested in promoting essential preventive care follow these action steps:

1. Examine claims and enrollment data in order to identify your top problem areas. Look for:
   - *Access.* How many beneficiaries have not selected a primary care provider? What percent of your beneficiaries do not see a primary care provider in the course of a year? How many beneficiaries have a claim for an ER visit yet do not have a claim for follow-up care?
   - *Excess costs or major changes in cost from one year to the next.* What are your highest-cost conditions or diagnoses? Are any of these conditions preventable (e.g., influenza) or modifiable (e.g., diabetes)?
   - *Utilization metrics.* Compare your utilization metrics to the HEDIS metrics. For example, what percent of your child beneficiaries receive routine well-child care? What percent of your pregnant beneficiaries receive early (first trimester) prenatal care?
2. Contract with health plans that are willing to support your healthcare strategies.
3. Develop a business case for investing in prevention and health promotion. Use your own data and look to the literature to estimate cost-savings.
4. Don't forget about administration. Sometimes the most difficult challenges are administrative; be sure to coach your plans to advise and educate providers and facilities on benefit changes.

4 Healthy Pregnancy and Healthy Children: Opportunities and Challenges for Employers

AOL's WellBaby Program: An Employer Case Study

Company Background

AOL, a large media company located just outside of Washington, DC, takes a proactive approach to controlling pregnancy-related healthcare costs by offering all employees and their families access to a comprehensive well-baby program.

AOL recognizes that healthy mothers and babies result from good preventive care that begins before conception and extends into early childhood.

AOL's WellBaby Program provides preconception, healthy pregnancy, and lactation programs that promote optimal health behaviors through awareness, education, counseling, and incentives. This program has helped AOL reduce or control its pregnancy-related health costs in a number of key areas.

Initial Impetus

AOL created the company's WellBaby Program out of concern for the health and well-being of their beneficiaries. An analysis of healthcare cost data identified the need to reduce high-risk pregnancies and sick-baby claims. AOL recognized that early intervention and health promoting activities (e.g., new parent education, breastfeeding education) have the ability to improve health and reduce healthcare costs.

AOL's Pregnancy-Related Cost Concerns

- **Costs associated with preterm birth.**
- **Costs associated with low-birthweight babies.**
- **Absenteeism due to disability and complications.**
- **Job retention.**
- **Sick-baby care in the first year of life.**

Business Case

Containing high healthcare costs, minimizing absenteeism due to pregnancy complications and episodic childhood illness, and retaining employees following the birth of a child drive the business case for AOL's WellBaby Program. The program's return on investment (ROI) is realized from both direct and indirect costs-savings.

Direct Cost-Savings:

- Reduced utilization of high-cost pregnancy care.
- Fewer neonatal intensive care unit (NICU) days: AOL saved an estimated $782,584 in NICU costs in 2005.
- Shorter hospital stays for mother and baby.
- Fewer sick-baby visits to the pediatrician.
- Fewer pregnancy-related short-term disability claims.

Indirect Cost-Savings:

- Reduced absenteeism and presenteeism.
- Improved retention (reduced turnover).
- Increased breastfeeding rate and duration.

History

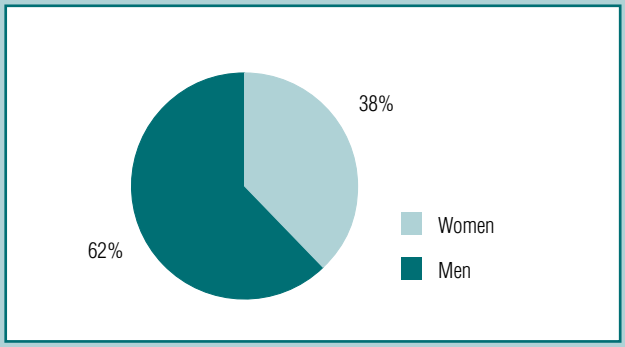
AOL's WellBaby Program was launched in 2003 when AOL identified the need for an intensive health promotion program for expectant mothers. Prior to 2003, AOL provided contracted telephonic counseling and health education services for pregnant women, and sponsored a few classes per year for expectant and lactating mothers, usually off-site. In 2003, the company established a working relationship with Inova HealthSource of the Inova Health System. Inova staff agreed to provide on-site programming to give the WellBaby Program a more visible presence. AOL was able to leverage the Inova staff's institutional knowledge, understanding of company culture, and existing relationships with employees. Together, AOL and Inova substantially revised the existing program to include a higher level of personal interaction, additional classes and content areas, expanded counseling services, and greater availability.

AOL human resource staff developed the WellBaby Program over a 3-month period with the following goals in mind:

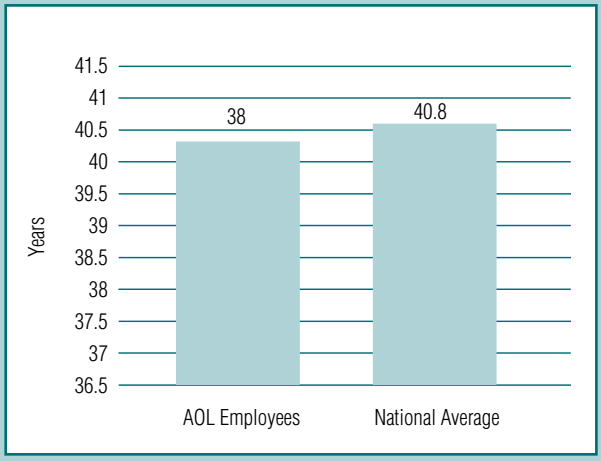
- Lower the healthcare costs related to pregnancy and childbirth.
- Focus on preconception, prenatal, pregnancy, and lactation issues facing employees and their partners.
- Increase timely, appropriate, proactive interventions to decrease costly utilization.
- Increase employee productivity by decreasing absenteeism and impairment.
- Provide incentives for participants to engage in health promoting activities.

Maternal Health at AOL: A Snapshot

Large female population:
38% of benefit-eligible employees at AOL are women.

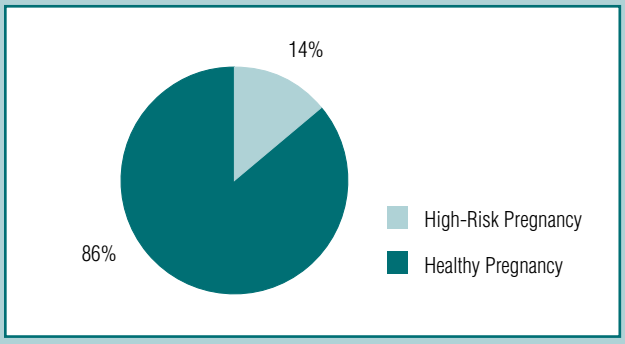


Young population:
The average AOL employee is 38 years old; spouses are a few years younger.



Growing average family size: The average family size grew by 2.5% in 2006, an upward trend consistent with prior years.

Many high-risk pregnancies: 86% of program participants are categorized as high-risk.



Due to the availability of an infertility benefit, which allows older women and women with preexisting health problems to become pregnant, AOL has a higher-than-average rate of high-risk pregnancies.

Description of the Program

AOL's WellBaby program includes three components: a preconception program, a pregnancy program, and a lactation program. Each program addresses the specific health issues and topics relevant to having a *healthy* baby.

The WellBaby Program provides a high-touch, high-tech approach to pregnancy health promotion.

Preconception Program

AOL's preconception program is intended for couples planning a pregnancy, as well as those planning to undergo infertility treatment. A care manager assigned to the woman and her partner assesses the woman's health history and makes individual recommendations and referrals. As a part of the preconception program, AOL provides a monthly newsletter, free and confidential webinars on key issues, and private consultations on the following topics:

- The science of getting pregnant.
- Preconception planning.
- Pregnancy.
- Nutrition and healthy lifestyle choices.
- Infertility treatment.
- Financial and emotional considerations.

Pregnancy Program

The pregnancy program is designed to educate and support pregnant employees, beneficiaries, and non-beneficiary dependants and their families. This program supports improved birth outcomes for the AOL family by combining education on health benefit offerings with health screenings, and guidance on preventive care.

Care managers provide support to improve the adoption of healthy behaviors, and increase prenatal and postpartum treatment compliance. They also work to improve the comprehension and retention of health information provided by the program and the woman's personal physician. For example, pregnant women receive same day or next-day phone calls if the care manager is aware of a problem (e.g., missed appointment, test result indicating a problem with the fetus). WellBaby staff assess the problem, and if needed, make sure the participant contacts her physician for additional information. Care managers immediately answer any questions about the care or treatment recommended by the woman's physician. In some cases (and with the woman's permission), the care manager schedules appointments and contacts her healthcare provider to make sure the woman gets necessary follow-up care.

Lactation Program

The lactation program assists employees and their infants in breastfeeding as long as possible. Women are enrolled in the program for as long as they breastfeed, and participation often continues through an infant's first year of life. The program provides worksite lactation benefits, comprehensive on- and off-site lactation counseling, group lactation classes, and tailored support.

Worksite lactation benefits include lactation rooms in every building on the AOL campus, two types of hospital-grade breast pumps in each room, and flexible break times to pump throughout the workday. Participants are also eligible to receive in-person consultations on breastfeeding and breastfeeding techniques in their homes or at the worksite.

Health education and support messages on breastfeeding are sent through Instant Messenger (AIM), emails, telephone calls, and the monthly WellBaby newsletter. In addition to breastfeeding support, the education messages include information on incorporating solid food into a baby's diet, and weaning the baby from breast milk. Helpful tips are also provided on working while breastfeeding.

Outline of WellBaby Program Components

Registration

- A WellBaby Program staff member gathers basic information from the beneficiary:
  - Name
  - Email
  - Phone number--both home and work
- A welcome email and overview of the program is sent to the participant.
- An initial welcome phone call is placed and the participant is screened for pregnancy risk factors.

Tailored Support and Health Education

- A care manager contacts each participant.
- Referrals to "physicians/centers-of-excellence" are provided on an as needed basis:
  - Physicians with extensive cultural knowledge for various groups.
  - Fertility centers with responsible implantation practices.
  - Maternal-fetal specialists for participants with a high-risk assessment.
- A monthly newsletter that includes health education information on a variety of pregnancy-related topics is sent to all participants; materials are also available at an on-site office.
  - Information from the March of Dimes and the Centers for Disease Control and Prevention (CDC).
  - Materials developed specifically for participants by program staff.
- Participants are invited to attended education classes in-person, by conference call, or in webinar format on preconception, prenatal, postpartum/new baby care, and a new parents group.

Follow-Up

- Care managers contact each participant immediately after the birth of their child:
  - In hospital for participants delivering at local hospitals.
  - Visits to high-risk perinatal/ NICU babies at local hospitals.
  - Phone call for patients delivering at other area hospitals.
  - Participants are encouraged to contact their care manager whenever needed.
- Care managers contact each participant 2 months after the delivery of their child. At this time, care managers:
  - Screen for postpartum depression.
  - Provide lactation support.
  - Assess treatment compliance.
  - Discuss the participant's postpartum visit and the importance of follow-up treatment for conditions identified during pregnancy.
  - Provide advice on family planning.

Lactation Support

- A lactation room is provided in every building and includes two types of breast pumps.
- Lactation classes are available.
- Certified lactation consultants are available to assist participants on- or off-site.

Program Incentives

- Participants earn points for participation in activities. Points can purchase gift cards at baby stores or a high-quality breast pump for use at home.

Program Outreach

- Advertisements for WellBaby classes are posted and placed on a company-wide schedule of events.
- Advertisements are also sent out via email.
- Instant Messenger (AIM) and the telephone are used for direct communication with participants.
- Benefits packet fliers distributed during open enrollment include WellBaby program information.

Program Achievements

AOL analyzes the following data points annually in order to access the achievements of the WellBaby program:

- Number of women enrolled in the program.
- Number of prenatal visits.
- Number of prenatal prescriptions filled.
- Number of cesarean deliveries.
- Number of preterm births.
- Number of NICU days.
- Breastfeeding rate.
- Utilization of pregnancy-related healthcare services.

Since 2003, the program has succeeded in:

- Increasing program enrollment and re-enrollment for subsequent pregnancies.
- Reducing the number of premature births.
- Reducing the number of low-birthweight babies.
- Reducing child morbidity.
- Increasing the use of prenatal care.
- Increasing the fill/re-fill rate of prenatal prescriptions.
- Increasing the breastfeeding rate. In 2005, 80% of participants breastfed; in 2006 84% breastfed.

Lessons Learned

AOL continually revises its WellBaby program to meet the needs of participants. Since the program's re-design in 2003, AOL has learned the following key lessons:

- *Be visible.* Let beneficiaries know the program is available.
- *Utilize independent contractors.* Anticipate privacy concerns and provide an extra layer between the employee and company management.
- *Follow-up.* Circle back with participants to clarify recommended treatment and increase treatment compliance.
- *Value high-touch care.* Both male and female employees respond well to in-person and personalized communication. Participants appreciate communication customized to their specific needs.
- *Enlist key players* in program development activities, such as:
  - Pregnant and lactating employees.
  - Spouses and family members of pregnant women.
  - WellBaby staff.
  - Benefits staff.
  - Employee assistance program (EAP) staff.
  - Local physicians, nurses, and counselors.
  - Local hospitals.
  - Disability managers.

Program Success

The success of the WellBaby program is based on the close relationships between the WellBaby coach, individual care managers, and program participants.

Care managers provide individualized care and tailor the program to each participant's unique needs. Through regular, proactive contact, the care manager continually assesses the woman's needs, addresses challenges, and encourages healthy behaviors. Additionally, the care manager assists with problem-solving as issues arise. This in-depth interaction ensures participant engagement. AOL's visible commitment to the program and to the health of all beneficiaries further promotes engagement.

Tips for Overcoming Barriers to Success

AOL's WellBaby program has been tremendously successful, but it did face challenges. Below is a list of these challenges and the solutions AOL developed to ensure continued program success.

Language/Cultural Challenges: Pregnant women may not understand prenatal care recommendations because they do not speak English.	• Distribute health literature from reliable sources in multiple languages. • Select program providers with cultural understanding and experience. • Employ providers with foreign language competencies. • Maintain a backup translator list.
Privacy Concerns: Pregnant women may not use counseling or education services because they fear pregnancy discrimination from their employer.	• Use contractors to build an extra layer between employee and management for pregnancy issues. • Advise participants of HIPAA compliance. • Create a pregnancy-friendly corporate culture.
Participant Compliance: Pregnant women may not follow care recommendations because they experience barriers to getting the recommended care/treatment.	• Set protocols for contact intervals. • Keep record of recommendations given. • Follow-up the next day after appointments or pregnancy-related events.

Conclusion

AOL's experience shows that providing high-quality education, tailored counseling and support services, and incentives encourages beneficiaries to take a more proactive role in pregnancy and infant health. By promoting and supporting self-care, AOL is able to control direct and indirect costs, and improve the health of the entire AOL family.

Answering the following questions can help your company understand the benefits of investing in pregnancy health.

Key Questions to ask when Considering a Well-Baby Program

- What percent of your company's health claims are pregnancy-related?
- What percent of your company's employee population are women of childbearing-age (women aged 18 to 44 years)?
- How many women of childbearing-age are enrolled in your company's health plans?
- What percent of beneficiaries give birth to low-birthweight babies? Is this number higher than the national average of 8% per year?
- What percent of beneficiaries give birth prematurely? Is this number higher than the national average of 12.5% per year? (Prematurity is defined by the March of Dimes as birth before 37 weeks gestation.)
- What is your retention rate for women following the birth of a child? Is retention following birth a concern to your company?
- Are you seeing high claims for sick-baby care in the first year of life?
- Are sick babies keeping your employees out of work?
- Would a well-baby program attract highly-skilled workers?
- Under what circumstance might a well-baby program add value to your organization?

5 Communication and Engagement: Incentivizing Prevention and Health Promotion

Guidance for effective health communication, beneficiary education, and employee engagement.

- Overcoming health literacy barriers.
- Tailoring health promotion, disease management, and wellness programs for children and families.
- Designing effective incentives.

5 Communication and Engagement: Incentivizing Prevention and Health Promotion

EMPLOYER COMMUNICATION FACT SHEET #1

Effective Health Communication: Guidance for Employers

The purpose of this health communication fact sheet is to provide employers with strategies that will help them successfully communicate benefit offerings and benefit changes to their employees. It includes sections on how to design effective health communication campaigns, and assist employees with the open enrollment process. This fact sheet also provides guidelines for assisting beneficiaries who have language barriers or limited health literacy.

Effective Health Communication: The Basics

Effective health communication is the cornerstone of the healthcare delivery system.[1] **Health communication** takes place in many different settings. People read, talk, and write informally about health in their homes, at work, and at school. They also discuss health issues with their health care providers. Health communication helps individuals become more aware of the health risks they face, understand preventive measures they can use to lower these risks, and identify avenues to obtain help when issues arise. Overall, the ability to communicate about health improves people's attitudes toward their health.[2]

Healthy People 2010, the document that lays out the nation's health and health care goals, provides a guide for developing policies to identify health threats, prevent disease, and promote healthy lifestyles.[1] The two major goals of *Healthy People 2010* are to[3]:

1. Increase the quality and years of healthful living; and
2. Eliminate health disparities.

Meeting the goals of *Healthy People 2010* depends on effective health communication. For example, to be healthy, people need to understand the importance of eating a nutritious diet, exercising regularly, quitting smoking, limiting alcohol consumption, eliminating drug use, and practicing safe sex. Consumers also need to learn how to obtain health coverage, select care providers, and access and properly use the healthcare delivery system.

Healthy People 2010 outlines 11 major attributes of effective health communication.[1]

Attributes of Effective Health Communication

- **Accuracy:** The content is valid and without errors of act, interpretation, or judgment.
- **Availability:** The content is delivered or placed where the audience can access it. Placement varies according to audience, message complexity, and purpose.
- **Balance:** Where appropriate, the content presents the benefits and risks of potential actions or recognizes different and valid perspectives on the issue.
- **Consistency:** The content remains internally consistent over time and is also consistent with information from other sources.
- **Cultural Competence:** The design, implementation, and evaluation process accounts for special issues for select population groups (for example, ethnic, racial, and linguistic) and also education levels and disability.
- **Evidence base:** Relevant scientific evidence that has undergone comprehensive review and rigorous analysis to formulate practice guidelines, performance measures, review criteria, and technology assessments for telehealth applications.
- **Reach:** The content gets to or is available to the largest possible number of people in the target population.
- **Reliability:** The source of the content is credible and the content itself is kept up-to-date.
- **Repetition:** The delivery of and access to the content is continued or repeated over time, both to reinforce the impact with a given audience and to reach new generations.
- **Timeliness:** The content is provided or available when the audience is most receptive to, or in need of, the specific information.
- **Understandability:** The reading or language level and format (including multimedia) are appropriate for the specific audience.

Source: U.S. Department of Health and Human Services. *Healthy People 2010: Health Communication.* 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office; November 2000. p.3.

Communication Challenges Associated with Limited Health Literacy

Health literacy is the capability to read, understand, and act on health information. Unfortunately, as many as 90 million American adults (half of the adult population) are encumbered with low health literacy, and are unable to understand basic health information.[1, 4] Literacy skills are a stronger predictor of health status than age, income, employment status, education level, or racial/ethnic group.[5] Low health literacy is a public health emergency, which is not fully recognized by health policy makers and healthcare providers.[1]

While people with low health literacy may have access to health information, they often fail to use the information properly or at all. Compared to people with intermediate or proficient health literacy skills, people encumbered with low health literacy are more likely to[2, 6]:

- Fail to enroll in health coverage programs.
- Lose their health benefits.
- Fail to make certain that their dependents are covered.
- Neglect to seek preventive health care such as immunizations.
- Make medication and treatment errors because they cannot understand or follow patient instructions.
- Use costly emergency department services as their primary source of health care.
- Be hospitalized.
- Remain in the hospital for longer periods of time because they cannot care for themselves at home.

Quick Facts[6]:

- 90 million American adults (half of the adult population) have low health literacy.
- 11 million adults are illiterate in English.
- Most health-related material is written at the 10th grade reading level or higher, yet the average reading level in the United States is equivalent to the 8th grade, and 20% of adults read at the 5th grade level or below.
- 50% of African Americans and Hispanics read at or below the 5th grade reading level.

As a result, people with very low literacy skills (those who read at the 2nd grade level or lower) tend to incur healthcare costs that are four times higher than people with better reading skills.[1]

To improve health care and contain costs, healthcare purchasers, health plans, and providers must face the issue of low health literacy. Employers should instruct their health plan administrators to develop inexpensive and practical methods for helping beneficiaries with low literacy skills to read, grasp, and use basic health information.

What is Health Literacy: Literacy Levels of Adults in America

Below Basic
- Searching a short, simple text to find out what a patient is allowed to drink before a medical test.
- Signing a form.
- Adding amounts on a deposit slip.

Basic
- Using a television guide to find out what programs are on.
- Comparing the ticket prices for two events.

Intermediate
- Consulting reference materials to find out which foods contain a certain vitamin.
- Identifying a specific location on a map.
- Calculating the total cost of ordering medical supplies from a catalog.

Proficient
- Comparing viewpoints in two editorials.
- Interpreting a table about blood pressure, age, and physical activity.
- Computing and comparing the cost per ounce of food.

Source: Partnership for Clear Communication. *What is health literacy?* Available at: http://www.p4chc.org/health-literacy.aspx. Accessed July 2, 2007.

Communication Challenges Associated with Racial and Cultural Language Barriers

Racial and cultural language barriers are a growing challenge for healthcare purchasers, health plans, and providers. Language barriers make it difficult to explain healthcare benefits, programs, and policies to employees and other beneficiaries. Also, language barriers sometimes cause minority employees to feel they are misunderstood, or that their needs are being ignored or neglected.[7]

As the U.S. workforce becomes more diverse, employers will need to address health disparities and low health literacy problems.

Currently, racial and ethnic minorities represent approximately 34% of the U.S. population. By the middle of the century, racial and ethnic minorities will represent 50% of the population.[8] Unfortunately, due to deficiencies in health education and care, members of these groups experience a lower life expectancy, higher infant death rates, and an undue burden of preventable chronic diseases such as heart disease.[9]

To address racial and cultural disparities, the healthcare delivery system must increase its cultural and linguistic competence. Cultural competence is a set of policies, attitudes, beliefs, and behaviors that enable healthcare purchasers, health plans, and providers to work effectively with other races, ethnic groups, and cultures.[1, 9]

Linguistic competence is the ability of people who speak the dominate language of a region to communicate with individuals who speak another language. Linguistic competence also involves written communication.[9]

How to Educate Beneficiaries About Health Benefits

Employers have a responsibility to educate their employees about the health coverage options they offer. Employees have a right to receive clearly presented health and benefit information, and assistance reading health materials when required.

More specifically, employers are responsible for informing employees about[10]:

- What benefits are covered in their health plan(s).
- Cost-sharing requirements and arrangements.
- Procedures for resolving complaints and appealing decisions.
- Licensure, certification, and accreditation status.
- Methods for measuring consumer quality and satisfaction.
- Composition of the provider network.
- Obtaining referrals to specialists.
- Use of emergency care services.
- Price, quality, and safety of health care provided by employer-sponsored plans.

The Employer Retirement and Income Security Act of 1974 (ERISA) requires health plan administrators to give plan participants specific information about the benefits to which they are entitled, including covered benefits, plan rules, financial information, and documents about the plan's operation and management. This information must be provided on a regular basis, either in writing or on request.

One important document that participants are legally entitled to receive automatically is a plan summary or summary plan description (SPD). Generally, SPDs:

- Outline healthcare services covered in the plan.
- Describe how services are provided and how the plan(s) operate.
- Describe how benefits are calculated.
- Explain the portion of costs for which the plan is responsible, and the portion of costs for which the participant (i.e., the beneficiary) is responsible (e.g., copays or coinsurance).
- Include information about how participants and providers should file claims.

ERISA specifically requires that SPDs include the following types of information:

- Cost-sharing provisions, including premiums, deductibles, and coinsurance/copayment amounts.
- Annual or lifetime caps or other limits on covered benefits.
- The extent to which preventive services are covered under the plan.
- Whether, and under what circumstances, existing and new drugs are covered under the plan.
- Whether, and under what circumstances, coverage is provided for medical tests, devices, and procedures.
- Provisions governing the use of network providers, the composition of provider networks and whether, and under what circumstances, coverage is provided for out-of-network services.
- Conditions or limits on the selection of primary care or specialty providers.

The provision of this information is intended to educate beneficiaries and make them aware of their healthcare options. In turn, employees and other beneficiaries are responsible for accessing covered healthcare services; they are also expected to practice healthy behaviors. More specifically, beneficiaries are responsible for[10]:

- Making an effort to develop and sustain good health habits such as exercising daily, not smoking, and eating a healthy diet.
- Learning about what their health plan covers, as well as the health plan options offered.
- Reading written information provided by their employer that explains their healthcare coverage.
- Obtaining additional information if they have questions or concerns.
- Being actively involved in making decisions about their health care.
- Paying their premiums and copays in a timely fashion.
- Following the rules and regulations that govern their healthcare coverage.
- Reviewing healthcare information, and following the instructions of their care provider prior to undergoing a procedure or starting a new medication regimen.
- Following the correct protocol if a dispute arises with the employer or a healthcare provider.

How to Help Beneficiaries Select a Health Pan: Open Enrollment Education Opportunities

Open enrollment is a period of time each year when employers: (a) permit new employees to enroll in a health plan, and (b) allow employees to make changes to their current medical coverage. During open enrollment employees may decide to change plans, add or drop a dependent, or add an optional program such as a dental plan.[11]

Employers can assist employees during open enrollment by distributing materials that explain new health plan options and changes to existing benefits. To facilitate employees selecting the plan option that best meets their family's needs, employers should provide information about the following:

- A general summary of what benefits are covered by the plan.
- Limits on coverage, as well as limits on coverage for certain disorders.
- Preexisting condition clauses that restrict coverage for a specific period of time.
- Coverage for preventive services, procedures, and medications.
- Extent of medication coverage, particularly for new drugs.
- Cost-sharing (i.e., premium contribution, deductible, copayment, or coinsurance requirements).
- Consumer-directed health plans (high-deductible health plans) or other non-traditional plan types.

Ten methods that employers can use to improve their open enrollment communication strategies are[12]:

- Communicate frequently with employees regarding their health coverage options, but avoid overwhelming employees with information. Give employees ample time to absorb new information, ask questions, and express concerns.
- Use simple terms to explain any changes.
- Thoroughly explain the goals and rationale of healthcare benefits to managers and business leaders, so that they can then effectively explain health plans to employees.
- Be ready to answer questions and face challenges from management and employees regarding changes.
- Be honest and direct when discussing health benefits, especially if employees are facing cost increases for their coverage.
- Discuss the "**5 C's**" of enrollment with employees. The "**5 C's**" include cost, coverage information, changes to plans, comparisons to last year's plans and options, and current options.
- Provide information to employees about the healthcare providers that will be available to them in new or revised plan options.
- Provide testimonials from other employees about their experiences with changes in healthcare coverage.
- Use a variety of methods to communicate with employees; for example, use the Web, printed materials, and face-to-face discussions.

Some groups of employees will need additional assistance during open enrollment, particularly those with mental or physical disabilities, low or fixed incomes, parents of children with special health care needs, elderly people, non-English speakers, and those with limited health literacy. Without special assistance from employers, these vulnerable groups may miss open enrollment periods, have large gaps in their coverage, or lose their coverage altogether.[10]

How to Use Health Communication Campaigns to Change Beneficiary Behavior

The purpose of health communication campaigns is to help beneficiaries learn how to use information to improve their current health and prevent future health problems. To develop a successful health information campaign, the National Cancer Institute (NCI) recommends that employers take the following steps[13]:

- Identify the major goal and objectives of the healthcare campaign.

- Decide on the group of beneficiaries that the employer wants to reach with their message.
- Develop the healthcare message so that it meets the goal and objectives of the campaign.
- Set up criteria for evaluating the campaign, and the degree to which it is successfully conveying its message.
- Pretest the message on a segment of the audience, and revise it as necessary.
- Implement the campaign, and monitor the audience to make certain that people are receiving and understanding the healthcare message that the employer wants to convey.
- Ensure that health communication campaigns address the educational needs of employees with literacy issues, language barriers, and cultural beliefs that differ from mainstream beliefs.

Successful health communication depends on multidimensional education approaches. There are many different communication methods that employers and health plans can use to engage beneficiaries. In order to addresses the unique learning needs of specific groups, an audience-centered perspective should be at the foundation of all communication efforts.[1]

An audience-centered perspective is one that reflects the lives and values of each targeted group. Characteristics that employers should consider when deciding on a communication approach include[1]:

- Primary language(s).
- Ability to read and retain health information.
- Education.
- Access to (and ability to use) a computer and the internet.
- Age.
- Gender.
- Income level.
- Ethnicity.
- Sexual orientation.
- Cultural beliefs and values.
- Physical and mental functioning.
- Experience with the healthcare system.
- Attitudes toward different types of health problems and treatments.
- Willingness to use different types of health services.

Methods used by communication campaigns and programs include paid advertising; printed materials such as fact sheets, pamphlets, booklets, and magazines; media outlets such as television, cable television, radio, newspapers, direct mail, and billboards; talk shows and educational television shows; public relations groups; and interactive digital media channels.[13] More and more, health information is being disseminated via digital technologies such as the internet and CD-ROMs. By using the World Wide Web, health educators can target specific audiences, and effectively communicate health-related information.[10]

Interactive digital media channels allow employers and health plan administrators to deliver health information to carefully selected audiences and receive feedback from audience members. These media channels are used to[13]:

- Send e-mail messages to select audiences.
- Post information about health-related campaigns on busy internet sites.
- Advertise health communication campaigns on the internet.

- Obtain feedback from selected audiences via the internet.
- Involve selected audiences in personalized, interactive activities.
- Communicate with partners and peers concerning progress involving health communication campaigns.

There are many types of interactive digital media channels available. The following box describes some of the better known internet and multimedia channels.[13]

Interactive Media Channels

- **CD-ROMs:** Computer disks that can contain a large amount of information, including sound, video clips, and interactive devices.
- **Chat rooms:** Places on the internet where users hold live typed conversations. The "chats" typically involve a general topic. To begin chatting, users need chat software, most of which can be downloaded from the internet for free.
- **Electronic mail (e-mail):** A technology that allows users to send and receive messages to one or more individuals on a computer via the internet.
- **Interactive television:** Technologies that allow television viewers to access new dimensions of information (e.g., link to websites, order materials, view additional background information, play interactive games) through their television during related TV programming.
- **Intranets:** Electronic information sources with limited access (e.g., websites available only to members of an organization or employees of a company). Intranets can be used to send an online newsletter with instant distribution or provide instant messages or links to sources of information within an organization.
- **Kiosks:** Displays containing a computer programmed with related information. Users can follow simple instructions to access personally tailored information of interest and, in some cases, print out what they find. A relatively common health application is placing kiosks in pharmacies to provide information about medicines.
- **Mailing lists (listservs):** E-mail–based discussions on a specific topic. All the subscribers to a list can elect to receive a copy of every message sent to the list, or they may receive a regular "digest" disseminated via e-mail.
- **Newsgroups:** Collections of e-mail messages on related topics. The major difference between newsgroups and listservs is that the newsgroup host does not disseminate all the messages the host sends or receives to all subscribers. In addition, subscribers need special software to read the messages. Many web browsers, such as Internet Explorer, contain this software. Some newsgroups are regulated (the messages are screened for appropriateness to the topic before they are posted).
- **Websites:** Documents on the World Wide Web that provide information from an organization (or individual) and provide links to other sources of internet information. Websites give users access to text, graphics, sound, video, and databases. A website can consist of one webpage or thousands of web pages. Many health-related organizations have their own websites.

Source: U.S Department of Health Services, U.S National Institutes of Health, National Cancer Institute. *Pink Book - Making Health Communication Programs Work.* Bethesda, MD: Office of Communications; 2001. p.11.

Throughout the campaign, employers should evaluate their selected audiences to make certain that the health information goals of the campaign are being met. Evaluating a health communication campaign helps employers determine the success of the campaign, decide on changes that must be implemented while the campaign is in progress, and plan changes to future campaigns.[13] Evaluation of health communication campaigns should be a continuous process, and not an afterthought.

How to Evaluate the Pros and Cons of Different Communication Methods

To evaluate the pros and cons of different communication methods, it is important to answer these questions about each communication method[14]:

- Does this method reach and influence the intended audience?
- Is this method appropriate for conveying the health message to the intended audience?
- How many individuals and groups will be able to receive the health message by using this method?
- Will this method be affordable? Is it a wise use of company resources?
- Will the message be accurate and up-to-date? How difficult will it be to update key information?
- What benefits does this method have in comparison to other methods?

Large groups may learn most successfully from television and radio. Depending on their literacy level, people may also learn from brochures, patient instruction sheets, and books. CD-ROMs and the internet provide an excellent method for learning about health, provided the intended audience has access to computers.

While interactive digital media offers many advantages to users who want to learn about health, there are drawbacks. For example, some health-related websites may be inaccurate or biased.[1] Employers who promote health-related information on the internet must ensure that the organization that is disseminating health information is credible, and that users can trust the information.

Employers who use health-related websites to educate their employees should carefully research the qualifications of the organization that developed the website. Employers should check each health website for the following information[13]:

- The exact purpose of the website. Avoid sites that are used for advertising and commercial purposes.
- The original source of the health-related information that is presented on the site.
- How the website protects the privacy and confidentiality of people who are consulting the site.
- Measures for evaluating the site.
- Methods for updating the site, and the frequency of updates.

Healthcare information is usually more credible if it is gathered on websites that end in gov, edu, or org. These domain suffixes identify the type of organization; for example, government organizations, universities, and nonprofit groups that focus on education and research.[14]

How to Assist Beneficiaries with Limited Health Literacy

Recall that health literacy is the capability to read, understand, and act on health information. Low health literacy, on the other hand, involves difficulty reading, understanding, and acting on health information.[4] Approximately 90 million American adults are encumbered by low health literacy, and thus do not benefit from health information.[4]

According to the 2003 National Assessment of Adult Literacy (NAAL), almost 45% of people in the United States have basic or below basic literacy skills[4]:

- The NAAL categorizes Below Basic as the ability to perform only the most simple and concrete literacy skills such as:
  - Adding amounts on a bank deposit slip.

  - Searching in a simple text to find out what a patient is allowed to drink before a medical test.
- The NAAL categorizes Basic skills as the ability to perform simple and everyday literacy activities such as:
  - Using a TV guide to find out what programs are on at a specific time.
  - Comparing ticket prices for two events.

Several companies and organizations, in addition to Federal health agencies, have begun to tackle health literacy problems. For example, Pfizer Inc's goal is to produce healthcare materials at the 6th grade level. At this level, about 75% to 80% of adult Americans will be able to read the materials easily.[2] Pfizer advises writers and designers to adhere to the following five clear health communication principles when creating healthcare materials[2]:

1. Explain the purpose and limit the content.
2. Involve the reader.
3. Make it easy to read.
4. Make it look easy to read.
5. Select visuals that clarify and motivate.

Strategies for making patient health education materials more readable and understandable include the following[2]:

- Use the active voice, everyday words, and a conversational style. Create and intersperse scenarios with characters and dialogue to make the materials more interesting.
- Avoid complex words; for example, use doctor instead of physician, shot instead of injection.
- Qualify or illustrate value judgment words such as regularly, heavy, and excessive. These words can mean different things in different contexts.
- Clarify concept phrases such as controlled room temperature, normal range, pros and cons, food groups, and diet. A person may have a general notion of room temperature, but may not know that the phrase represents a fairly broad range.
- Provide examples for the more complicated words and concepts.
- Break-down complex topics into smaller, simpler sections that readers can digest more easily.
- Avoid long, complicated, convoluted sentences and paragraphs.
- Provide simple pictures and layouts. Avoid blurry, unclear visuals.

How to Assist Beneficiaries with Racial, Ethnic, or Language Barriers

Helping employees with racial, ethnic, and language barriers understand health information in order to engage them in healthcare decision-making is one of the greatest challenges facing benefit managers. Employers can use the following strategies to address racial and ethnic health disparities[10]:

- Provide educational materials about health and medical benefits in languages other than English.
- Provide interpreters for individuals who do not speak English during open enrollment.
- Train benefits and human resource staff in transcultural communication techniques.
- Develop ways to monitor improvements in educating employees from diverse cultures.
- Document improvements in the care and treatment of racial and ethnic minorities and share the results with employees.

Summary Points:

- Effective health communication is the cornerstone of the healthcare delivery system.
- The purpose of health communication campaigns is to help beneficiaries learn how to use information to improve their health and prevent future health problems.
- Employers can assist employees in selecting appropriate coverage by distributing materials that explain new health plan options and changes to existing benefits.
- Employers are learning to provide health information using a wide variety of communication methods. As a result, employers are beginning to meet the challenge of becoming better educators and communicators.
- To improve health and contain costs, healthcare purchasers, health plans, and providers must face the issue of low health literacy.
- Employers and health plans should be able to communicate successfully with beneficiaries from different cultures and ethnic groups who speak different languages.
- Employers and employees should be able to talk with each other about health-related concerns, and find solutions that meet the needs of all parties.

Additional Resources

National Network of Libraries of Medicine, Health Literacy Organizations and Programs
http://nnlm.gov/outreach/consumer/hlthlit.html#A7.

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5 Communication and Engagement: Incentivizing Prevention and Health Promotion

EMPLOYER HEALTH COMMUNICATION FACT SHEET #2

Engaging Beneficiaries in Health Promotion

The purpose of this health communication fact sheet is to provide employers with strategies that will help them effectively engage their beneficiaries in child health promotion. It includes information on using incentives to increase participation in existing and new health promotion programs, and tips on how to make existing programs more inclusive of families.

Engaging Parents in Child Health Promotion

Protecting and promoting the health of children is extremely important. Healthy children are better able to learn and grow; and the health habits they learn, such as exercising and eating a balanced diet, carry into adulthood.

Parents play a critical role in protecting the health of children. They decide when their children need health care and where they will ask for it. They are also responsible for purchasing and dispensing medications and other prescribed treatments.

In the past, children became ill, were disabled, or died due to infectious diseases such as smallpox, measles, and polio. These diseases no longer pose a major threat to children's health in the United States, because effective immunizations and hygiene practices are in place. However, there are new threats to children's health including obesity, diabetes, asthma, and mental illness. These new threats require creative solutions.

In order to combat preventable health problems, employee engagement is necessary. Because children are not able to access healthcare services or make informed healthcare decisions independently, parents must be educated and motivated on their behalf. The first step towards ensuring that beneficiaries use their healthcare benefits to protect and promote the health of their family is benefit education.

Steering Employees to the Right Benefit

Benefits Awareness

Health benefit programs can only be effective if employees and their families know how to use covered services and where to go to get care. Employees need to receive accurate, easily understood information to help them make informed decisions about their health plan options, and choice of providers and facilities.

Recently, employers have embraced the concept of **employee engagement** and have increased communication around open enrollment and appropriate benefit use. Employers typically offer a range of communication and education opportunities around benefit enrollment and health plan selection, including:

- On-line support tools
- E-mail
- Electronic newsletters
- Customer service assistance
- Health fairs
- Printed information
- Bulletin boards
- Paper newsletters
- Paycheck stuffers

For more information on beneficiary education and communication, please refer to Fact Sheet #1.

Helping Employees Select A Healthcare Provider

Many beneficiaries do not have a medical home or a regular source of care for their family and need assistance in selecting a primary care provider. Network or plan changes may require beneficiaries who have an existing relationship with a provider to select a new provider or facility from time to time. Limited health literacy and lack of experience challenge many families in finding and building a relationship with a quality provider. Employers should assist employees in finding a medical home by providing information on provider characteristics, quality metrics, and other important variables such as location and office hours.

Benefit education materials should include a list of qualified healthcare providers, each with a name, telephone number, and the following information[1]:

- Primary care or specialty status.
- Education, board certification status, and years in practice as a physician and as a specialist, if so identified.
- Experience with performing certain medical or surgical procedures.
- Consumer satisfaction, clinical quality, and service performance measures.
- Geographic location and whether the facilities are accessible to the disabled.
- Hospital privileges.
- Whether or not the practice is accepting new patients.
- Languages spoken and availability of interpreters.
- Provider compensation, including base payment method and additional financial incentives.

For more information on the medical home concept, please refer to Part 4.

Helping Employees Understand Levels of Care

Emergency Services: Appropriate Use

Fear often drives parents with sick children or injured family members to the emergency room (ER). Someone with an average knowledge of medicine and health cannot always define life-threatening conditions. Further, many beneficiaries may not be able to determine which types of injuries or illness their primary care provider is equipped to handle. It may be helpful to provide information in routine benefit communication materials on the signs and symptoms of health problems that necessitate ER use. Employers should also clearly define the consequences of inappropriate ER use (e.g., high copayment). Many employer-sponsored plans provide coverage for urgent care facilities.

Education on the difference between ER and urgent care services is an important way to help employees and their dependents make the right decision when choosing a care facility.

Emergency Room Symptoms

Appropriate symptoms or conditions for the ER include:

- Excessive or uncontrolled bleeding.
- Possible fracture.
- Serious burns.
- Choking.

- Chest pain – possible sign of heart attack or severe asthma attack.
- Shortness of breath – possible sign of heart attack, severe asthma attack, or a severe allergic reaction.
- Sudden or severe abdominal pain – possible sign of heart attack, appendicitis, aortic aneurysm, injury, or accident.
- Sudden confusion, loss of consciousness, or any change in mental status – possible sign of stroke, meningitis, shock, dehydration, carbon monoxide poisoning, accident, or injury.
- Convulsions.
- Unconsciousness.

Conditions that may be confusing to beneficiaries include:

- Severe vomiting.
- Severe eye pain with redness.
- Wounds requiring stitches.
- Broken bones and cuts from accidents or falls.

Incentivizing Prevention and Health Promotion

Employers are in a unique position to engage employees and their families in seeking proper health care through education and incentives.

Over the past 10 years, employers have invested in incentive programs to increase employee participation and engagement in health programs, encourage compliance with treatment protocols, and adopt healthy behaviors. Research has shown that incentives, when properly applied, are effective at promoting participation in a variety of activities.

Percentage of Large Employers who Offered Incentives in 2008	
Completing a health assessment	31%
Participating in a behavior modification program	18%
Participating in a disease management program	13%

Source: Mercer Health & Benefits. *National Survey of Employer Sponsored Health Plans: 2008 Survey Report.* New York, NY: Mercer Health & Benefits; 2009.

Designing Effective Incentives: An Overview

Incentives (e.g., cash incentive for completing a health assessment) can help unbalance the status quo and encourage healthier behaviors. **Disincentives** (e.g., premium surcharges for tobacco use or failure to complete a health assessment) may be effective in limiting undesirable behavior.

Effective incentives share the following characteristics:

- Participation is easy.
- The purpose of the incentive makes sense.
- The rules are simple and fair.
- The rewards are perceived as attainable, sufficient, and desirable.
- The intended outcomes are measurable (e.g., reduce BMI, receive immunization).

Incentives can be attached to any type of program, policy, or benefit. Incentives have been proven to increase participation in health assessments, wellness programs, and disease management programs. They may also be effective at encouraging the active involvement of parents and caregivers in child health promotion.

Employers are in a unique position to engage employees and their families in seeking proper preventive care through education and incentive programs.

Incentive Examples

Incentives can be tangible or financial. Tangible incentives are products (e.g., bike helmet) or opportunities (e.g., paid time off, healthy cooking class) that are given in full or part to a participant in a program. Financial incentives are monetary in nature (e.g., cash incentives, reimbursements, partial payments). Examples of both types of incentives are provided below.

Tangible (Non-Monetary)[2]

- ***Special prizes*** encourage employees to participate in company-sponsored health and wellness events (e.g., gift certificates, personal electronics, or paid days off).
- ***Fitness center discount program.*** Provide free or discounted family memberships at local fitness clubs. There are many different types of health and fitness centers. Some are single focused, i.e., weight lifting or aerobics only, while others offer a full array of services. Which type is best depends on the needs and interests of the family. Discounts remove financial barriers and encourage participation.
- ***Offer free or discounted health-related items.*** Providing free health-related items as incentives for participation or compliance with programs can increase participation and retention rates. Items should directly correspond to the intended health behavior. For example, provide a free baby car seat to employees who participate in a healthy pregnancy or injury prevention class.

Financial Incentives and Tax Benefit Solutions[2]

- ***Offer to pay*** part of each employee's premium for participation in a company-sponsored wellness program, a disease management program, or completion of a health assessment.
- ***Provide a cash incentive.*** Pay employees a fixed amount (e.g,. $50 or $100) for completing a health assessment on family health risks or participating in a parenting class.
- ***Make a contribution to an employee's health-related savings account*** (examples below).

Health reimbursement accounts (HRAs), **health savings accounts** (HSAs), and **flexible spending accounts** (FSAs) all provide opportunities to engage beneficiaries in healthcare decision-making. These accounts allow employees to manage "healthcare dollars" and make resource allocation decisions. Employer contributions to some types of savings accounts can be tied to participation in health promotion programs or activities and thus function as a financial incentive. Employers should provide beneficiaries with information on the rules and regulations governing the use of these funds.

Health Reimbursement Accounts (HRAs)

HRAs are medical care reimbursement plans established by employers that can be used by employees to pay for health care. HRAs are funded solely by employers. Employers typically commit to contribute a specified amount of money for premiums and medical expenses incurred by employees or their dependents.

Health Savings Accounts (HSAs)

HSAs are savings accounts created by individuals to pay for health care. An individual may establish an HSA if he or she is covered by a "qualified health plan" which is a plan with a high deductible ($2,200 for family coverage in 2008).[3] Both employers and employees can contribute to an HSA, up to an annual limit equal to the lesser of the deductible in the HSA-qualified health plan, or a statutory cap. Employee contributions to the HSA are made on a pre-income tax basis, and some employers arrange for their employees to fund their HSAs through payroll deductions. Employers are not required to contribute to HSAs established by their employees, but if they elect to do so their contributions are not taxable to the employee. Interest and other earnings on HSA dollars are not taxable. Employers can assist their employees by identifying HSA options, facilitating applications, and negotiating favorable fees from HSA vendors.

Flexible Spending Accounts (FSAs)

FSAs are tax-free savings accounts that cover things health plans often do not such as nonprescription drugs, eyeglasses, child care, and other qualifying expenses. Employers set the ceiling on how much workers can withhold. The funds should equal projected use because they do not roll over into the next year.

Health Assessments[4]

A health assessment is a survey and/or physical examination that assesses a person's health status, health risk behaviors, family history, and personal medical history. The results of the assessment provide a picture – in the form of a score, inventory list, or narrative – of the health risks a person faces (such as high blood pressure, obesity, or elevated cholesterol), and the risky behaviors that could jeopardize their health (such as excessive drinking, physical inactivity, or failing to wear a seat belt). The assessment may also predict the risk of future negative events such as a heart attack. Health assessments can be administered to employees and beneficiaries, including adult dependents.

With this information, employers can tailor disease prevention, disease management, and health improvement programs to address the needs of employees and their dependents. For example, if the results show that a substantial number of adolescent dependents smoke, an employer may chose to provide a teen-tailored smoking cessation program.

Disease Management Programs

Disease management programs offer an opportunity for coordinated care services, case management, and education. When considering disease management programs for children, employers should remember that the chronic conditions that affect children are different from those that affect adults. Many are the result of **congenital** (meaning present at birth) or **environmental factors**. Common disease management programs for children include:

- Asthma management.
- Autism.
- Congenital disorders and disabilities such as cerebral palsy and muscular dystrophy.
- Juvenile or type I diabetes.
- Lead poisoning treatment and management.
- Management of mental health disorders (depression, anxiety, bipolar disorder, attention deficit with hyperactivity disorder, eating disorders, etc).
- Obesity or weight management.
- Rheumatoid diseases, such as juvenile arthritis.

To encourage the appropriate use of disease management services by chronically ill children and their families, employers should:

- Revise or restructure program content to reflect the unique needs of children and adolescents. For example, adult-focused weight management programs can be adapted for children and adolescents.
- Work with disease management vendors and review program enrollment to ensure child and adolescent participation.
- Encourage parental involvement in disease management activities.
- Reward participants for their adherence to the program.

Disease Management Programs	2008
Health Website	81%
Case management	79%
Nurse advice line	76%
Health assessment	65%
Health advocacy	47%
Targeted behavior modification	39%

Source: Mercer Health & Benefits. National Survey of Employer Sponsored Health Plans: 2008 Survey Report. New York, NY: Mercer Health & Benefits; 2009.

Healthy Pregnancy Programs

Healthy pregnancy programs offer women the healthcare services and education they need to support a healthy pregnancy. Prenatal services, which include screenings for serious complications such as gestational diabetes, preeclampsia, and Rh(D) incompatibility are essential healthcare services and should occur as early in pregnancy as possible.

To increase compliance with prenatal care programs, employers should offer robust preconception, prenatal, and postpartum care benefits and[2]:

- Review claims for timely prenatal care visits and appropriate screenings.
- Review enrollment in employer-sponsored or employer-endorsed prenatal education programs.
- Encourage pregnant beneficiaries and their partners to attend classes on child safety, parenting, labor and delivery, and related topics. Employers may want to consider offering incentives for participation (e.g., child car seat, breast pump).

Certain women are at high risk for pregnancy complications due to existing chronic health problems (e.g., diabetes, obesity, lupus), a history of pregnancy complications (e.g., preeclampsia, preterm birth), genetic or congenital conditions affecting the fetus (e.g., Downs syndrome, neural tube defects), environmental factors (e.g., exposure to lead or mercury), behavioral or lifestyle choices (e.g., alcohol, tobacco, drug use), or other issues. These women may benefit from pregnancy-tailored disease management programs or high-risk pregnancy management programs. Such programs typically provide health coaches, tailored education, flexible benefits, and other care management services that improve the quality, comprehensiveness, and coordination of available services.

Well-Child Care

Well-child care is preventive healthcare for children and adolescents, birth to age 21 years. It includes growth monitoring, immunizations, developmental and other screening services, and anticipatory guidance (education for parents). Screenings identify children in need of further assessment and diagnosis, and provide an opportunity for referrals for early intervention services. All children and adolescents need well-child care.

Employers can encourage their employees to keep up-to-date on well-child care by offering incentives for the appropriate and timely use of recommended healthcare services. For example, an incentive for parents whose children have received all of the recommended immunizations in a particular time period could include:

- A bike helmet.
- Safety covers for electrical outlets.
- Age-appropriate books.
- A financial contribution to a HSA or HRA.

Wellness Programs

Many employers are implementing in-house health and **wellness programs**. The mission of a wellness program is to improve the health status of employees and promote productivity by:

- Increasing employees' awareness of healthy lifestyle choices.
- Increasing employee awareness of health risks.
- Providing support to employees in making healthy lifestyle choices.
- Assisting in the development of supportive workplace environments in order to meet health promotion goals.

Employers have many opportunities to expand existing employee wellness programs to be inclusive of families. For example:

- Encourage employees to bring their adolescents to worksite gyms on special family days.
- Host a family safety class that provides guidance on car seat fitting, bike safety, 'baby-proofing' a new home, or food safety.
- Provide kid-friendly incentives for family health programs, such as physical activity-focused toys or games (e.g., jump rope) or books about sports.

Designing Effective Incentives: Employer Guidance[2]

Incentive programs can effectively engage beneficiaries in healthcare decision-making and encourage them to take a proactive role in improving their health status. Incentive programs hold great promise for improving health and stabilizing healthcare costs. However, in order to reach their potential, these programs must be well designed and appropriate for the population in which they are implemented.

The following advice can help employers develop and implement a successful disease prevention, disease management, or health improvement incentive program for children and adolescents:

Research the population:

- When considering children and adolescents as participants in a disease prevention, disease management, or health improvement incentive program, remember that the healthcare needs and personal motivators of children are different from those of adults. For example, children and adolescents may be motivated by smaller rewards than adults, or prefer a tangible reward, such as a health-related item (e.g., jump rope, bike helmet) compared to a monetary reward. Sometimes incentives should be directed at an adult parent rather than the child.

Develop a program:

- The goal of offering incentive programs is to increase and maintain participation. Make sure that the actions required to receive an incentive are doable (e.g., a 10-pound weight loss). Also, ensure that the required program or activity is accessible to all employees and dependents. Whenever possible, remove financial barriers by making the programs free or low cost.

Evaluate and revise:

- Remember that behavior change is difficult and takes time. However, even small changes (such as increasing the number of children who eat the recommended five fruits and vegetables a day) can make an impact on overall health.
- To keep incentive programs attractive, employers should consider rotating incentives. For example, to encourage employees to take a health assessment each year, an incentive program could be structured as follows:
  - Year 1: Financial incentive (e.g., $100 premium credit for completion).
  - Year 2: Tangible incentive (e.g., health-related sports equipment).
  - Year 3: Financial incentive (e.g., $100 health-related gift card).

Health and Wellness Programs in the Community[2]

To raise awareness of the importance of health promotion, employers may want to partner with public agencies to co-sponsor community-wide events such as a walk-jogathon, 5K race, or health fair. Employers gain allies in the community by partnering with public agencies (such as State health departments), community organizations, and local schools. Examples of partnerships include:

- Sponsorships of local sports teams for children and adolescents.
- Scholarships for employees' dependents who excel in areas of health promotion, athletic achievement, or involvement in civic-minded activities that focus on health.

By supporting community-level interventions, employers can improve the overall health and safety of the communities in which they live, thereby improving the health and quality of life of current and future employees.

Summary Points

- Health benefit programs can only be effective if employees and their families know how to use covered services and where to go to get care. Employees need to receive accurate, easily understood information to help them make informed decisions about their health plan options, and choice of providers and facilities.
- Employers are in a unique position to engage employees and their families in seeking preventive care through education and incentive programs.
- Incentive programs can effectively engage beneficiaries in healthcare decision-making and encourage beneficiaries to take a proactive role in improving their health status. Research has also shown that incentives, when properly applied, are effective at increasing participation in a variety of health promotion and disease prevention activities.
- Employers can tailor existing programs and policies to be inclusive of families and respond to the unique needs of children, adolescents, and pregnant women.

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6 Health Education Materials for Beneficiaries

Fact sheets specifically designed to educate and inform beneficiaries on important maternal and child health topics. Employers are encouraged to customize these fact sheets and share them with employees.

- Preconception, prenatal, and postpartum care
- Child health
- Adolescent health
- Preventing medical errors

6 Health Education Materials for Beneficiaries

BENEFICIARY EDUCATION FACT SHEET #3

Information for Beneficiaries on Preconception, Prenatal, and Postpartum Care

The purpose of this fact sheet is to help women plan for a healthy pregnancy (preconception care), enjoy a healthy pregnancy (prenatal care), experience the successful delivery of their baby (intrapartum care), and learn how to care for their newborn (postpartum care).

Preconception Care

Plan a Healthy Family

Before becoming pregnant, it is essential to prepare yourself for your pregnancy, labor and delivery, the postpartum period, and life with your child. Take time to talk with your primary healthcare provider about having a family, attend pregnancy and childrearing classes, read books and other materials about pregnancy, and review recommended sites on the internet about maternal-child health.

Remember:
Health education and knowledge is the key to having a successful pregnancy and raising a healthy, happy child. Learn about good nutrition, physical fitness, well-child care, ways to control the environment so that it is safe for your baby, and stress management.

There are a number of issues that you should discuss with your healthcare provider about preparing to have a baby. These issues are:

- **Your support system**: A first step is to assess your family relationships, and if you can count on help from your husband/partner, and other family members, including other children. Does your family communicate well? Do other family members support your desire for a child? How do you and your family handle stress? Who makes the major decisions in your family? How does your partner or significant other feel about having a child?
- **Financial considerations**: While money is not everything, it is very important to have enough money to provide your child with a comfortable home, nutritious food, good health care, and schooling. You will also need the funds to take care of yourself properly during and following your pregnancy.
- **Location and access to health care:** Do you live in a remote rural area that will make it difficult to keep your prenatal appointments? How far is the hospital from where you live? Will you have transportation available so that you can see your healthcare provider?
- **Cultural aspects:** What are your culturally-based beliefs and values concerning family, motherhood, pregnancy, and childbirth? What value does your culture place on family? What is the place of women in your culture, and what is considered to be a woman's role? What traditional rituals surround pregnancy and childbirth? What type of diet do you normally follow? Does your diet contain a great deal of sodium or fatty cooking substances such as lard? Do you eat a Kosher diet or a strict vegetarian diet? If so, you will want to discuss issues about food with your healthcare provider and with a dietician.
- **Language barriers:** Do you easily read, speak, and understand English? Will you need an interpreter to help you understand instructions during your pregnancy? Do members of your family understand English? Will you need books and instruction guides in your own language in order to understand your provider's instructions? If so, ask for help from your healthcare provider.

- **Spiritual beliefs:** Do you practice any specific religion? How do your spiritual beliefs affect your desire to have a child? Do you have a spiritual leader with whom you would like to consult during your prenatal period, and during the process of labor and delivery?

Health Coverage Planning

You should check with your health plan about maternity benefits *before* you become pregnant. Request information from your plan on exactly what maternity benefits are covered. If the coverage does not meet your needs, consider switching plans during open enrollment. A comprehensive benefits package should include:

- Amniocentesis, ultrasounds, and sonograms.
- Breastfeeding counseling and instruction.
- Contraceptive agents.
- Immunizations (e.g., influenza, hepatitis B, tetanus).
- Labor and delivery.
- Maternal depression screening, counseling, and treatment.
- Newborn hearing screening.
- Newborn screening for genetic and endocrine disorders.
- Postpartum care.
- Preconception counseling (e.g., alcohol and tobacco cessation).
- Preeclampia screening.
- Prenatal care visits
- Preventive and treatment services for sexually transmitted infections (STIs).
- Rh (D) incompatibility screening and preventive interventions.
- Rubella susceptibility screening.
- Screening for Down syndrome and other common genetic disorders, and neural tube defects.

Your employer-sponsored health plan may also cover additional services such as doulas (medical paraprofessionals who provide support to women during labor and delivery), visiting nurse programs (which reduce stress by helping a new mother learn child care techniques in the home environment), or new parent education and counseling.

Also remember to investigate what special health promotion services your employer provides at the worksite. For example, does your employer offer parenting programs for expectant or new parents? Does your employer have an employee assistance program (EAP)? Does the EAP offer support groups for new parents?

Avoiding Unintended Pregnancy

Planned pregnancies are far more likely to have successful outcomes, and to produce healthier children. Unintended pregnancies can cause life-long medical, financial, social, and emotional problems for the mother, the child, and the entire family. The first step is for women and their partners to learn about contraception. It is important for men to be included in family planning and contraception decisions.

If you are planning a family, but are not ready yet to become pregnant, you need to discuss contraceptive methods with your healthcare provider. Also, check with your health plan to see which types of contraception are covered.

There are many different types of contraceptive methods:

- **Combination oral contraceptives**, which are the most popular form of contraception in the United States.
- **Injectables, implants, and intrauterine devices (IUDs)**, which have the advantage that they do not need to be used daily.
- Condoms and diaphragms (called **barrier methods**). Condoms have the advantage that they can help prevent pregnancy and the transmission of sexually transmitted infections (STIs), yet they are not always reliable.
- **Cervical caps and female condoms** help to reduce the risk of unintended pregnancies. Female condoms also result in "safer sex" (although not safe sex) by reducing the degree to which partners are exposed to genital contact and contact with fluid secretions.
- **Spermicides** such as foams, jellies, and creams; coitus interruptus (withdrawal); and the rhythm system are other methods of contraception. Withdrawal and the rhythm system are the least effective forms of contraception.
- **Emergency contraceptives**, sometimes called the "morning after pill," contain higher doses of hormones than found in oral contraceptives. These medications are not for routine use; they are to be used in emergencies when regular contraceptives fail (e.g., a condom breaks) or when contraception was not used. Emergency contraceptives should be taken within 48 hours of intercourse to prevent an unintended pregnancy. The sooner emergency contraceptives are taken following sexual intercourse, the more effective they are. Emergency contraceptives are safe, and they rarely cause major side effects.
- The only 100% effective form of contraception is **abstinence**.

Planning for a Healthy Pregnancy

If you plan to become pregnant soon, it is important to begin to: (a) make healthy lifestyle changes now, (b) address any existing health problems, and (c) gather information about pregnancy through classes, books, videos, and other sources. Here are some suggestions to follow during your preconception period:

- Sign up for parenting classes where you can learn about the physical and emotional changes you will go through during your pregnancy. If possible, have your partner accompany you to these classes.
- Stop smoking and drinking alcohol immediately as these substances can be very dangerous to the fetus, particularly during the first trimester of pregnancy. Tell your provider about every medication that you are taking to make certain that your medications are safe for the baby.
- Learn all you can about good nutrition, and strive to eat a balanced diet. Speak with your healthcare provider or a dietician if you must consider dietary restrictions due to cultural or religious beliefs. Healthy pregnancies require adequate nutrition; if you are not getting enough protein, iron, calcium, or other essential nutrients you or your fetus may suffer from health problems during or after pregnancy.
- If you have not had **rubella** (German measles), you should be immunized against this disease

at least 3 months before you become pregnant. Rubella is a dangerous viral disease that may cause severe fetal defects during the first and second trimesters of pregnancy.

- You should be screened for the presence of **STI**s, and receive counseling on how to prevent STIs in the future. You should be immediately treated for an STI if you are infected. STI's put a fetus at risk during pregnancy and some such as HIV and syphilis, can be transmitted to a baby during labor and delivery.
- Seek counseling if you feel **depressed** much of the time. In addition to talking with a therapist, you may need medication to manage your depression.
- Seek **couples counseling** if you and your partner are having any problems, especially concerning having a family. It is best to talk through problems and work out potential issues before you become pregnant. Be certain to report any incidents of threatened or actual domestic abuse that have arisen between you and your spouse or sexual partner. The stress of a pregnancy can aggravate domestic problems. Seek counseling before starting or enlarging your family.

Prenatal Care

Choosing a Healthcare Provider for Your Pregnancy

Choosing a healthcare provider to care for you during your pregnancy is one of the most important decisions you will make. There are several types of providers available. You can select:

- A **midwife** who is qualified to care for you if you are at low risk for complications during pregnancy. There are **certified nurse-midwives (CNMs)** who are registered nurses and certified midwives who are not nurses. A nurse midwife should be associated with a physician and a hospital in case complications arise.
- Your **family physician** who you know and trust, and who may have cared for you and other family members over the years.
- An **obstetrician-gynecologist (OB-GYN)** who is a physician who has specialized in all phases of pregnancy, labor and delivery, and the postpartum period.
- A **maternal-fetal medicine specialist** who is trained to care for women facing very high-risk pregnancies. You should consider a specialist if you have severe preexisting medical conditions, have had complications of pregnancy in the past, or carry a severe genetic condition that could damage the baby.

Your First Prenatal Visit

After you have chosen a healthcare provider, you should next schedule your first prenatal visit. This visit is very important because it will provide your physician or midwife with the information needed

to help ensure the successful delivery of your baby. You may want to take your partner or significant other to this and other prenatal visits. During this or subsequent visits, the physician or nurse will gather the following information[1]:

- Your **medical history**. The provider will ask you about any preexisting medical conditions, previous pregnancies, allergies, and any congenital problems that exist in your family. You should take all of your medications (prescribed and over-the-counter) to this meeting.
- Your **due date**. Your provider will estimate your due date by counting ahead 40 weeks from the beginning of your last menstrual period. An accurate due date is important in order for your provider to monitor your pregnancy and your baby's growth.
- Your **health status**. Your height, weight, blood pressure, and pulse will be measured, and your provider will evaluate your overall physical health.
- **Pelvic examination data.** The provider will examine the vaginal area and cervix for abnormalities, including the presence of infection.
- **Blood test results.** These lab tests will confirm your blood type (including your Rh (D) factor) and also confirm exposure to syphilis, measles, mumps, rubella, hepatitis B, and HIV. You may need immunizations if you are not up-to-date. Some immunizations (e.g., rubella) are contraindicated during pregnancy so you may be asked to return for the immunization as soon as you deliver your baby.
- **Urine test results.** Urinary test results are used to diagnose kidney or bladder infections. Sugar in the urine may indicate diabetes or gestational diabetes. Urinary tract infections are particularly harmful during pregnancy and should be treated immediately.
- **Prenatal tests results.** Prenatal tests provide valuable information about the status of your fetus. Tests your provider may recommend include a routine ultrasound, amniocentesis, or chorionic villus sampling (CVS).
- **Fetal movements**. Your provider will assess fetal movements, and teach you how to count fetal movements on a regular basis at home.
- Your **lifestyle choices.** Lifestyle choices are crucial to a healthy pregnancy. You and your provider will discuss your usual diet, exercise routine, smoking, use of recreational drugs, alcohol consumption, and what type of work you do.

After completing your first visit, you will usually **s**chedule future prenatal visits every 4 to 6 weeks during the first 3 months (first trimester) of your pregnancy. During each visit, your provider will monitor your vital signs, weight, fetal movements, and fetal heart tones. During each visit, you should discuss any problems or concerns that you have.

Caution:
Avoid eating shark, swordfish, king mackerel, tilefish, or tuna because these fish contain high levels of mercury that could harm the fetus. Limit fish to two or three servings a week, including canned fish.

Making Healthy Lifestyle Changes

You need to be willing to make some important lifestyle changes during your pregnancy in order to ensure good health for you and your baby. Important areas to discuss with your healthcare provider are:

- **Nutrition.** You need to eat a balanced, nutritious diet that contains whole grain products, fruits, vegetables, meat, poultry, fish, eggs, beans, and diary products. It is all right to enjoy sweets and fats occasionally, in small amounts. You will probably gain between 20 and 35 pounds during your pregnancy. There are some important

precautions that you should take in the kitchen. Fully cook meat, eggs, and fish. Do not eat hot dogs and luncheon meats, including deli ham, turkey, bologna, and salami, unless you have reheated them until very hot. These foods could expose the baby to dangerous bacteria that may cause serious complications. Avoid unpasterized milk, cheese, and other dairy products. Limit caffeine intake to two drinks a day.

- **Exercise.** You should exercise moderately around 30 minutes a day. It is important to not become overheated or dehydrated during exercise. If you cannot carry on a conversation while exercising, slow down and breathe.
- **Work.** It is usually safe to work during your pregnancy as long as you do not become overly exhausted or develop any signs of complications. Check with your employer about restrictions on work activities, or special safety precautions that you should take once pregnant. You may be asked (or required) to avoid jobs that require heavy lifting, operating dangerous machinery, continuous standing, or working around toxic substances that could harm the fetus.
- **Vitamins and minerals.** It is essential to take 400 mcg (0.4 mg) of folic acid daily during the first trimester of pregnancy.[2] Folic acid will help to protect your baby's brain and spinal cord, and prevent some cardiovascular disorders. You will also need to take calcium pills and iron. If you are not anemic, you will probably take 120 mg of iron weekly. Remember to follow your provider or pharmacist's instructions on vitamins and minerals, and don't assume that more is better: Excessive iron intake can result in premature and low-birthweight babies.[3]
- **Care of your cat.** If you have a cat, you should wear gloves when you change your cat's litter box, or have a family member do it for you. Caring for your cat could expose you to an infection called toxoplasmosis.
- **Hot tubs.** Do not use hot tubs or saunas during the first trimester.
- **Sexual relations.** Unless you develop complications, it is safe to have sexual relationships while you are pregnant. Remember to take precautions against contracting sexually transmitted infections (STIs) during pregnancy. Contracting an STI could result in complications for you and your baby. Having your partner wear a condom will provider safer sex, but not safe sex.

Taking Medications and Using Alternative Therapies

The fetus is especially vulnerable to the effects of medications or substances taken during the first trimester of pregnancy.

Because many medications can cause fetal abnormalities, you must inform your healthcare provider about **every medication** that you are taking, including over-the-counter medications and alternative medications, such as herbal supplements.

Be sure to obtain your healthcare provider's approval before taking any new medication or herbal substance, and do not stop taking a medication without your provider's permission.

Medications that are particularly harmful to the fetus include the following:

- Accutane (used to treat acne).
- Tegison and soriatane (used to treat psoriasis).
- Ace inhibitors (used to control high blood pressure).
- Aspirin (it can cause excessive bleeding if taken close to the time of delivery).

Alternative drugs that should not be used during pregnancy because they may cause fetal abnormalities or premature labor include:

- Ginseng, golden seal, kava kava, licorice, Saint Johns wort, and woodworm.

Aromatherapy essential oils can also cause damage to the fetus, so avoid:

- Wintergreen, sage, myrrh, basil, marjoram, and thyme.

Stopping all Substance Use

The use of alcohol or illicit drugs during pregnancy is considered abuse because it can severely harm the growth and development of the fetus, and cause lifelong problems for the child. Substances that can harm the fetus include nicotine (found in cigarettes, cigars, and chewing tobacco), alcohol, cocaine, marijuana, narcotics, hallucinogens, stimulants, sedatives, tranquilizers, and pain relievers.

The fetus is at the greatest risk of complications from a woman's substance abuse during the first trimester of pregnancy. A pregnant woman must stop smoking, drinking alcohol, and using any unprescribed drugs before she plans to become pregnant, or as soon as she suspects she is pregnant.

Women who continue to abuse substances during pregnancy may develop high blood pressure, anemia, nutritional deficiencies, pancreatitis, alcohol-induced hepatitis, and liver cirrhosis. Complications of maternal substance abuse for the fetus and newborn include growth retardation, premature birth, and permanent brain damage. Also, the infant of a woman who abuses drugs may be born addicted to the abused substance. The baby may have to endure severe withdrawal symptoms such as hyperactivity, tremors, seizures, fever, vomiting, and restless sleep. As they grow older, some of these children experience long-term learning and behavioral problems.

Reporting Discomforts

You may experience some discomforts during your pregnancy. One common problem during the first trimester of pregnancy is nausea and vomiting, known as **morning sickness**. You may also develop increased urination, constipation, hemorrhoids, shortness of breath, nasal stuffiness, minor cramping, backache, and fatigue. Your feet and ankles may swell, and you may develop mild varicose veins. Be certain to tell your healthcare provider about these problems if they arise.

Recognizing Danger Signs

Pregnancy and childbirth are usually normal, healthy events. However, complications do sometimes develop. If you experience any of the following signs, contact your healthcare provider immediately.

- A significant change in, or absence of, fetal movement for 6 to 8 hours.
- Abdominal pain.
- Elevated temperature, above 101 degrees Fahrenheit (38.3 degrees Celsius), with chills.
- Painful urination.
- Persistent vomiting, lasting more than one day.
- Rupture of membranes.
- Severe, persistent headache.
- Swelling of the face or hands.
- Vaginal bleeding in any amount or of any color.
- Visual disturbances.

Treating Complications

There are a number of potentially dangerous complications that may develop during pregnancy. Some of these complications include the following:

- **Iron deficiency anemia.** Risk factors for iron deficiency anemia during pregnancy include anemia prior to the pregnancy, poor nutritional status, lack of supplemental iron intake, close spacing of pregnancies, twins, and excessive vaginal bleeding prior to or as a result of pregnancy. It is important to correct your anemia because it will make you more susceptible to infections, and less able to tolerate blood loss during and after delivery. Also, the baby may be born prematurely. To treat iron deficiency anemia, follow these guidelines:
  - √ Increase your intake of iron-rich foods such as fortified cereals, enriched breads, liver, meat, dried fruits, green leafy vegetables, and legumes. Take iron supplements as ordered by your healthcare provider.
  - √ Do not take iron with milk because milk inhibits absorption. Because iron causes constipation, eat a diet high in fiber and fluids. Do not be alarmed if iron turns your stools black as this is normal.
- **Hyperemesis gravidarum.** Some women develop severe, uncontrollable vomiting during pregnancy. The cause of this problem is unknown. Severe vomiting can result in dehydration and rapid weight loss. If you develop this condition, eat six small meals a day, avoid spicy and fried foods, and eat dry crackers before getting up in the morning. Also sit quietly upright for 30 minutes or longer after eating. Notify your healthcare provider at once if these simple nutritional changes do not stop the vomiting as other interventions will be necessary.
- **Pregnancy induced hypertension (PIH) or preeclampsia.** PIH, which is the second leading cause of maternal death, develops in 6% to 8% of all pregnancies.[4] Signs of PIH are elevated blood pressure, swelling of the face and hands, and protein in the urine. If you have been diagnosed with PIH and develop a severe headache, blurred vision, epigastric pain, decreased urine output, or nausea and vomiting, call your healthcare provider at once. You will need to go to the hospital immediately. As the only cure for PIH is delivery, you should anticipate that you will undergo a cesarean delivery. Once your baby is delivered, you and your baby will be free of symptoms and out of danger.
- **Gestational diabetes mellitus (GDM).** Gestational diabetes usually occurs in the second or third trimester. If you have a family history of diabetes, you are at increased risk for GDM and should be screened for GDM between weeks 24 and 28 of your pregnancy. If you test positive for GDM, your healthcare provider will place you on a special diet to control your blood sugar. Uncontrolled GDM increases your baby's risk for complications before and after birth, and can increase your risk of developing adult-onset diabetes later in life. If diet alone does not control your GDM, your healthcare provider may prescribe insulin therapy. Your healthcare provider will teach you how to give yourself insulin, either via injection or an insulin pump. He or she will instruct you in monitoring your blood glucose levels. You will need to learn the signs and symptoms of having too low or too high a blood glucose level so that your insulin dosage and diet can be adjusted.

Overcoming Maternal Depression

Despite the assumption that having a baby is always a happy event, it is not unusual for a woman to become depressed during or following a pregnancy. Maternal depression can affect a woman at any time during her pregnancy. Women who have experienced a previous episode of depression are at increased risk for maternal depression. The major signs and symptoms of maternal depression include:

- Depressed attitude, irritability, or anxiety.
- Loss of pleasure in hobbies, interests, and activities.
- Abnormal weight loss or gain.
- Insomnia (not being able to sleep) or sleeping too much.
- Agitation or loss of energy.
- Feelings of worthlessness or guilt.
- Impaired concentration.
- Lack of self-confidence and self-esteem.
- Poor concentration and memory.
- Negative expectations.
- In severe cases, recurrent thoughts of death or suicide.

Maternal depression is a very serious problem. This condition can reduce a woman's quality of life and willingness to make important lifestyle changes, which are necessary for a successful pregnancy, labor, and delivery. Maternal depression can also affect the child's life, and result in emotional, cognitive, and behavioral problems that can extend into adulthood.

Remember:
If you are experiencing any of the symptoms of depression, notify your healthcare provider right away. Maternal depression is a treatable problem, and the sooner you receive the help you need, the better for you and your baby.

If you are depressed, you should be able to receive counseling through your health plan, and your employer's employee assistance program (EAP). Your primary care provider or a specialist may prescribe medication as well. Some communities also offer health education services, prenatal programs, and parenting classes that can assist you. Contact your health plan or EAP to see what services are available in your area.

Intrapartum Care – Labor and Delivery

Recognizing True Labor Versus False Labor

Labor is the physiological processes by which the fetus is expelled from the uterus into the vagina, and then into the outside world. To prepare for labor, you will hopefully have taken prenatal classes with your partner during which you will have learned: (a) breathing and relaxing exercises, (b) what to expect during labor and delivery and the postpartum period, and (c) how to tell the difference between true labor and false labor.

During **true labor**, you will experience regular contractions that gradually become stronger, longer, and closer together. The pain of true labor starts in the lower back, and it moves across the lower abdomen. Comfort measures and hydration do not stop the process of true labor. The cervix dilates, and you will feel the baby move down into the birth canal. **False labor** is characterized by irregular contractions, which may be regular for brief periods of time. You can stop false labor contractions by walking, changing your position, and drinking fluids.

Managing Pain During Labor

Every woman experiences pain during the birth of her child. However, the degree of pain that a woman experiences is influenced by a number of factors such as:

- Her physical condition at the time of birth.
- Her degree of fatigue and anxiety.
- The size and position of the fetus.
- The amount of noise and activity in the labor and delivery room.
- Cultural factors such as attitude toward pain.
- Her attitude toward pain, and prior experiences with pain and pain relief.
- Her self-efficacy (how well she thinks she will deal with pain).
- The presence of a partner or significant other to offer comfort.

Nonpharmacologic measures provide pain relief without analgesics or anesthesia. These measures include breathing exercises, acupuncture, visual imagery, relaxation techniques, listening to music, watching television, talking on the telephone, taking a warm shower with assistance, sitting in different positions, squatting, and rocking. Immersion in tubs and birth balls are other highly-rated measures, as well as the presence of a companion who can provide continuous supportive care throughout labor.

You may choose to have **pharmacologic** pain management that includes systemic, regional, and general interventions. Systemic analgesics such as opioids and sedatives help to relieve pain and anxiety without producing unconsciousness. These medications can cause nausea and vomiting. They may also cause respiratory depression in the newborn if given within 4 hours of delivery. These medications are therefore used with caution.

Epidural anesthesia is one of the most common methods of regional pain relief. The anesthesiologist inserts a catheter into the epidural space within the spinal column. Most women experience pain relief within 20 minutes. The advantage of regional anesthesia is that the woman remains awake during the birth of her child, but does not feel pain in the area that has been blocked. Epidurals can cause complications, however. Epidurals have been linked to an increased risk of fetal distress and cesarean section. Adverse effects can also include immobility (the woman can't walk

easily during labor and delivery), difficulty urinating or getting to the bathroom, low blood pressure, difficulty pushing, itching, severe perineal tears, and reduced likelihood of having a vaginal birth.

General anesthesia is used primarily in emergencies such as an emergency cesarean section. Unfortunately, the woman is not awake to experience her baby being born, and the newborn may have nervous system depression and be difficult to awaken after the surgery.

Remember:
Start discussing pain relief during labor with your healthcare provider early in your pregnancy. You should talk about any fears or concerns that you have, and what pain relief measures are available. Your partner or significant other may want to be present during these discussions, and also attend birthing classes with you. Many women who use low-risk drug-free pain relief methods such as tubs, showers, birth balls, application of hot or cold objects, and massage or stroking give these measures high marks. To avoid or minimize the side effects of epidurals and other medications, consider giving non-pharmacologic methods a try.

Labor and Delivery Complications

Undergoing an Episiotomy Procedure

An **episiotomy** is a surgical cut to enlarge the vaginal outlet just before the baby is born. Episiotomies are performed more frequently on first-time mothers, or when the newborn is believed to be unusually large. Research has repeatedly shown that routine or liberal episiotomy does not offer benefits and in fact increases risk of harm such as more pain and longer healing time.

The rate of episiotomies has declined over time. In 1980, 64% of women underwent an episiotomy; by 2004 the rate had decreased to 23%.[5] Research findings indicate that birth in a side-lying position, the administration of intravenous narcotics during the second stage of labor, the application of warm compresses to the perineum during second stage labor, and massage of the area reduce the incidence of tears.[5]

It is important to ask your healthcare provider about your risk for undergoing an episiotomy, and the measures that can be taken to protect the perineal area from trauma during childbirth.

Undergoing a Cesarean Section

A **cesarean section (c-section)** is major abdominal surgery. The surgeon makes an incision through the woman's abdomen and uterus and removes the baby. C-sections require a longer recovery time than vaginal births do, and involve increased risk for infection, blood clots, difficulty establishing breastfeeding, breathing problems in the newborn, severe and longer-lasting postpartum pain, and many other adverse effects. C-sections are performed for

high-risk pregnancies when the woman's life or health is at risk, and when natural delivery of the child might result in severe complications.[6] Some reasons to perform a c-section include:

- Cephalopelvic disproportion (the uncommon situation when a baby's head is too large to pass through the woman's pelvis).
- Compression of the umbilical cord that cuts off nutrients to the fetus.
- Untreated sexually transmitted infections.
- Failure of labor to progress.
- Non-reassuring fetal heart tones.

In recent years due to health system pressures, c-sections have been performed on women with minor complications or none at all.[6]

If you require a c-section, you will first need to sign consent forms for the surgery and for your baby's care. The nurse will teach you how to move, cough, and deep breathe so that you will not develop postoperative complications such as pneumonia. The nurse will insert an indwelling urinary catheter, shave and cleanse the abdomen in the area of the incision, take your blood pressure, monitor the fetal heart rate, and start an intravenous infusion. You will then be given preoperative medications. During this period, talk with your partner or a significant other, and practice **deep breathing** and **relaxation exercises** to allay your anxiety prior to the surgery.

Postpartum Care

Routine Care of Your Newborn in the Delivery Room

With your newborn's first breath, your baby begins the transition from life in the womb to life in the outside world. This first breath initiates major changes in the newborn's cardiovascular and respiratory systems. Air enters the newborn's lungs, and fluid is removed from the lungs. If the baby is born via c-section, it may need to initially be on a ventilator. In either case, it is the newborn's respiratory adjustment that is most critical at birth. A major task of the labor room staff is to immediately assess your infant's respirations.
Also, just after delivery, the newborn is quickly checked for any abnormalities, and then assigned an Apgar score—at 1 and 5 minutes. An **Apgar score** assesses an infant's well-being in five physiological areas:

- **Heart rate.** Is it absent? Below 100 beats per minutes? Over 100 beats per minute?
- **Respiratory effort.** Are breaths absent? Or are breaths slow and irregular? Does the infant have a good cry?
- **Muscle tone.** Are muscles flaccid? Does the newborn bend its arms and legs, fingers and toes? Does the newborn display active motion (does it wiggle)?
- **Reflex irritability.** Is the newborn non-responsive? Does the baby grimace? Does the newborn have a vigorous cry?
- **Color.** Is the newborn pale or blue? Pink with blue extremities? Completely pink?

Each assessment area has a score from zero to two, with a total score of zero to 10. A good Apgar score is between eight and 10. Two apgar scores are measured; one immediately at birth and one a few minutes after. Though ideally both are high, the second of the two is more significant. It is not uncommon for a baby to have a low immediate Apgar score.

In addition to measuring your newborn's Apgar score, the nurse will quickly perform many other duties to ensure the safety of your baby. The nurse will:

- Keep your infant warm by drying the newborn with a pre-warmed blanket, and placing him/her against your skin, under a radiant heat warmer, or in warn blankets. Evidence shows that infants who are immediately placed next to their mother's skin are better able to begin breastfeeding, and interact with and attach to their mother faster. They also cry less, stay warmer, and have improved heart and lung function.[7]
- Suction the baby's mouth and nose to make the infant gasp for air, and also remove mucus and fluids. These actions may improve the newborn's ability to breathe.
- Stimulate the infant by stroking the back so that he/she cries.
- Take your infant's vital signs and obtain an ancillary temperature.
- Measure and record the infant's weight, length, and the circumference of his/her head and chest.
- Inject vitamin K intramuscularly to prevent bleeding problems until the infant can manufacture his/her own clotting factors.
- Place antibiotic drops or ointment into your infant's eyes to prevent eye infections.
- Give your infant an injection that will immunize him/her against hepatitis B.

Receiving Routine Maternal Care Following Delivery

The **postpartum period** is the 6-week period after birth during which a woman's body returns to the pre-pregnant physiological condition. Your needs and your care will continually change throughout this time period. In the first day after delivery, healthcare providers should:

- Measure your blood pressure, pulse, and temperature.
- Provide a warm blanket to prevent 'postpartum chill.'
- Provide food and fluids.
- Allow you quiet time to rest.
- Check for bladder distention and urinary retention.
- Examine the height and firmness of your fundus, which is the body of the uterus that is above the openings of the fallopian tubes.
- Examine the perineal area for bleeding, bruising, or trauma.
- Assess lochia, which is a uterine discharge composed of blood, tissue, and mucus. For the first 6 days following giving birth, lochia is red-tinged; during the next 3 or 4 days, lochia is brownish; finally lochia turns to white and then disappears altogether.
- Examine the breasts. The breasts will be secreting colostrums, which is a yellowish fluid that contains protein, fat-soluble vitamins, and antibodies. Two (2) to 4 days following delivery, your breasts will become engorged with milk.
- Prepare you to breastfeed your baby, or, if breastfeeding isn't possible, teach you to bottle-feed.
- Keep a record of your bowel movements.
- Encourage your partner to participate in holding and caring for your infant.

Care Following Labor and Delivery Complications

Receiving Care Following an Episiotomy

If you underwent an episiotomy, you can expect to experience some discomfort in the perineal area. During the first 12 hours after delivery, a healthcare provider will apply ice to the perineum for 30-minute periods. Ice will help to reduce pain, swelling, redness, or discharge. After 12 hours, you will be encouraged to take comforting, warm sitz baths. You will probably be given a stool softener to make having a bowel movement easier. Prior to discharge, the nurse will teach you perineal care which involves (a) patting the perineal site with witch hazel pads or Tucks®, (b) wiping from front to back following urination, and (c) changing perineal pads after urinating or having a bowel movement. In addition, you need to learn the signs and symptoms of infection such as a fever, swelling of the perineum, foul discharge from the area, and pain. Normally, you can expect the episiotomy to heal within 3 to 4 weeks. Do not have sexual intercourse until the episiotomy is completely healed.

Receiving Care Following a Cesarean Section

Following a c-section, your postoperative care will be similar to care after any abdominal surgery. For example a healthcare provider will:

- Frequently measure your blood pressure, pulse, and temperature.
- Provide intravenous fluids as ordered.
- Administer medications for pain or for nausea.
- Change your abdominal dressing.
- Examine your abdominal incision for signs of bleeding or infection.
- Measure your intake of fluids and your output of urine.

In addition, your healthcare provider will assess: (a) the height and firmness of the top of your uterus, (b) the color and odor of the lochia, and (c) the breasts for the secretion of colostrums or milk. The nurse will also help you with the care of your newborn baby when you feel strong enough.

Learning to Feed Your Infant

Infants need adequate nutrition if they are to grow and develop properly. While carbohydrates are the most important source of energy, a newborn must take in protein for tissue growth, fats for energy, and essential fatty acids. Infants must also receive fluids, vitamins, and minerals. Without adequate nutrition, infants can suffer malnutrition or anemia (resulting from low iron intake).

Medical experts agree that **breastfeeding** is better than formula-feeding. Leading national and international organizations recommend exclusive breastfeeding for the first 6 months of the infant's life, continued breastfeeding to at least the infant's first birthday, and as long thereafter as mother and baby desire.

Human breast milk is nutritionally superior to formula. Infants who are breastfed are better prepared to fight off infections and allergens as they grow. Evidence also suggests that breastfed infants are less likely to develop obesity, and type I and type II diabetes; and are less likely to suffer from ear infections, respiratory infections, gastroenteritis, and eczema (a skin disorder) than infants who are formula-fed.[8] Breastfeeding also has important short- and long-term health benefits for women. A

woman's risk of breast cancer is decreased 4.3% for every 12-month increment of breastfeeding over her lifetime. Her risk of ovarian and endometrial cancer is decreased through breastfeeding as well.[9]

Breastfeeding should be started as soon as possible after delivery, because it stimulates the uterus to contract and helps to prevent postpartum hemorrhage. New studies also indicate that newborns should begin breastfeeding during the first 2 hours of life when they are most alert and able to start nursing.[10]

Breastfeeding is not recommended if you must take potentially harmful medications that can be passed through the milk to your infant, or you are HIV positive. If you cannot breastfeed or you decide not to breastfeed, there are measures you can take to suppress lactation. You can wear a tight-fitting bra and apply ice packs to the breasts. Do not attempt to express milk from your breasts, as this only stimulates the breasts to produce more milk.

Most breastfeeding mothers feed their infants on demand or every 2 to 3 hours. At first, plan to feed your baby for at least 15 minutes at a time, or until your child falls asleep. Also, stop feeding after 15 minutes if the baby is simply sucking on the nipple, but is not taking in any milk. How do you know if your baby is getting sufficient milk? An infant who is taking in enough milk usually produces between six to 10 wet diapers a day, with stools present in most diapers.[11]

Remember:
Whether you choose to breast- or bottle-feed, you should learn about your infant's nutritional requirements. You also need to become skilled at feeding techniques that will encourage your baby to eat. Skilled support from lactation consultants, mothers with breastfeeding experience, and health professionals can provide invaluable help for new mothers who want to breastfeed.

When breastfeeding, it is important to keep the breasts clean. Shower everyday, but avoid washing the breasts with soap because soap tends to dry the skin. Wash your hands thoroughly before each feeding. Use disposable bra pads to absorb leaking milk. Do not purchase bra pads with plastic linings because the plastic keeps the breasts from drying properly. Remember to change the pads frequently to lower the risk of infection.

One problem you may encounter is breast engorgement, which can be very painful. It helps to apply moist heat to the breasts before feeding your baby, and cold compresses following the feeding. You can also massage the breasts before and during the feeding. If these measures do not work, try hand expressing your milk or using a breast pump to extract excessive milk.

Another problem associated with breastfeeding is nipple soreness. To prevent sore nipples, make sure your infant grasps the entire area around the nipple, and not just the nipple. Also, insert your finger between the baby's mouth and nipple to break the suction after the baby finishes his/her feeding and alternate breasts to prevent excessive sucking on one nipple. A lactation consultant, experienced mother, or health professional can help with positioning to minimize nipple soreness. If you develop cracked nipples, notify your healthcare provider immediately. Cracked nipples put you at risk of developing mastitis (a serious breast infection). Signs of breast infection include fever, swelling of the breasts, and tenderness.

Remember that while breastfeeding suppresses ovulation, it is not a 100% effective form of contraception. If you have reestablished sexual relationships, discuss contraceptive measures with your primary care provider to prevent an unintended pregnancy.

If you do not exclusively breastfeed, you should feed your baby about an ounce of formula at a time every 3 to 4 hours during the first couple of days. Then you should increase the feedings to 2 to 3 ounces per feeding over the first 2 weeks. Most infants who are 12 weeks old are able to ingest 5 to 6 ounces every 3 to 4 hours.[4]

Caution:
Signs that your baby is not receiving enough milk include dehydration, lethargy, sunken fontanels (soft spots that are between the cranial bones), and decreased urine output. Notify your healthcare provider immediately if these signs develop.

Taking Your Baby Home

Before you take your new baby home from the hospital or birthing center, you need to receive adequate instruction concerning the care of your infant and yourself.

During your stay in the hospital, the staff should instruct you how to:

- Bathe your newborn baby. You should not immerse the baby in water for 7 to 10 days after birth. By this time, the infant's umbilical cord will have dried and come off.
- Breast- or bottle-feed your child. You should be able to demonstrate that you are comfortable with feeding techniques before you take the baby home.
- Determine if your baby is receiving adequate nourishment and know the signs of malnourishment.
- Use a bulb syringe to remove excess nasal secretions that can cause a baby to choke. You should always keep a bulb syringe close to your baby, so that you can grab it quickly if necessary.
- Take an ancillary temperature to determine if your baby has a fever.
- Cleanse the baby's perineal area with each diaper change to prevent irritation and diaper rash.
- Plan your daily schedule so that you get periods of adequate rest and relaxation.
- Find and schedule responsible people who can provide you and your partner some time together away from home. While your major consideration should be the new baby,

remember to engage in activities that will maintain a good relationship with your partner, friends, and family.
- Arrange for a visiting nurse to come to your home so that you can ask questions about any problems you are having with caring for your infant.

Remember:
If you or your partner have problems reading, speaking, or understanding English, request an interpreter to be present when you receive instructions from healthcare providers. Also, ask for learning materials that are presented in your own language whenever possible.

The hospital staff should also remind you to:
- Make an appointment with your healthcare provider 6 weeks after delivery for a postpartum check-up.
- Make an appointment with your baby's healthcare provider.
- Make an appointment with an employee assistance program (EAP) counselor if available at your job. It may help to discuss how you can most easily return to the workplace following your maternity leave.

Understanding Postpartum Blues and Depression

While having a new baby is usually a happy event, it is also a stressful event - both physically and emotionally. For this reason, many women experience **postpartum blues** during the first two weeks following childbirth. Postpartum blues are usually mild, and last for only a few days or so.

The exact cause of postpartum blues is not known. Possible causes include hormonal changes, fatigue from childbirth, and loss of rest and sleep related to the care and feeding of a newborn. New parents may also need to adjust to changes in their relationship and lifestyle. In addition, some parents face new financial concerns related to having a baby; for example paying for a nanny if both parents work.

Postpartum depression affects approximately 10% to 20% of women following childbirth.[12] Some risk factors for postpartum depression include anxiety over having a baby, extreme ambivalence toward the pregnancy and the new baby, a poor relationship with the baby's father, previous bouts of depression, serious financial problems, and a lack of friends and extended family who can offer support.

Signs and symptoms of postpartum depression are similar to the manifestations of any major depression. They include:
- Deep feelings of guilt and failure.
- Loneliness.
- Low self-esteem.
- Severe anxiety.
- Fatigue and insomnia.
- Headache.
- Appetite changes (unusual hunger or loss of appetite).
- Anger toward the baby and/or the baby's father.
- Withdrawal from the baby and/or the baby's father.
- Fear of the baby or of harming the baby.
- Thoughts of suicide.

If you develop any of these symptoms and they persist for more than 2 weeks, or they develop 2 weeks following delivery, contact your primary healthcare provider or a mental health professional immediately. You should also discuss your problems with your partner and with close friends and relatives so that they understand what you are going through.

Treatment for postpartum depression includes **antidepressants** and **counseling**. With professional care and family support, women do recover from postpartum depression and are able to successfully assume their vital role as mothers.

If you feel a little blue when you first come home with your baby, there is no need for concern. As you adjust to your new role, the blue mood should lift, and you will begin to feel like your old self. However, if the feelings persist or deepen, contact your healthcare provider right away. You may be at risk for postpartum depression.

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6 Health Education Materials for Beneficiaries

BENEFICIARY EDUCATION FACT SHEET #4

Information for Beneficiaries on Child Health

The purpose of this fact sheet is to help parents develop a preventive framework that will keep their child in good health as he/she grows. It includes information on well-baby and well-child care, tips on how to find a medical home, and information on key health risks and prevention opportunities.

Finding a Medical Home for Your Family

Your first baby is on the way. It won't be long and you need to choose your baby's healthcare provider. What should you do? When you are looking for a provider for the first time, ask friends or family members. You can also ask your primary care provider, obstetrician-gynecologist (OB-GYN), or certified nurse midwife (CNM) for their recommendations.

Different types of healthcare professionals can care for your child including pediatricians, family physicians, and nurse practitioners.

Your health plan should be able to provide you with a list of network physicians they contract with. Make a list of potential candidates, and then compare them. Quality, cost, and convenience are all important when choosing a provider.

- **Pediatricians** are physicians that specialize in the medical care of children from birth through adolescence. Pediatricians provide preventive and acute care services that address physical, mental, and social health and well-being. Pediatricians do not care for adults over the age of 23.
- **Family physicians** train in pediatrics and other areas including internal medicine, orthopedics, and obstetrics. Family physicians specialize in the lifelong care of individuals and families. If you choose a family physician your whole family can receive primary medical care from the same physician.
- **Pediatric nurse practitioners (PNPs)** are master's prepared advanced practice registered nurses who provide health care to children from birth through 21 years of age. A PNP works in collaboration with a licensed medical physician and provides comprehensive health care to children in a variety of settings. A PNP may consult with other members of the healthcare team, may coordinate care, and/or make referrals to other members of the healthcare team. PNP's practice under their state Nurse Practice Act and in accordance with individual state laws and regulations. PNP's have prescriptive authority (meaning that they can prescribe medicine in all 50 states). **Nurse practitioners and family nurse practitioners** are also qualified to provide care to children and adolescents.

Once you have selected the type of healthcare provider and have the names and contact information of a few contenders, set up an interview or new **patient orientation visit** with them. Some practices may charge for an initial consultation; others may not. Go prepared with a short list of questions about key health issues. Is the provider available on Saturdays or in the evening? What is their on-call or emergency schedule? How does the provider handle phone calls from parents? How quickly are calls returned? Can you reach the provider by e-mail? Ask how long patients typically wait for appointments. Does the office have backups of more than a half an hour? Find out how far in advance they book-up.

It is important for you to find a healthcare provider who:

- Is accessible.
- Is close to where you live and/or where you work.
- Can see your child immediately when symptoms are concerning.
- Is covered by your health plan.
- Has appropriate board certification, licensure, or training.
- Has a qualified, caring, and friendly staff.
- Has reasonable office wait times.
- Will respond after business hours.

Are you comfortable asking your doctor questions? What will you do if your child becomes sick in the middle of the night? The relationship you form with your child's healthcare provider is an

extremely important one. Your provider will monitor your child's growth and development, help prevent diseases, and make sure your child is growing into a healthy person. Make sure you can:

- Trust your provider and his/her staff.
- Comfortably share your concerns or ask questions about your child.
- Call if you have a question.
- Feel that your provider cares about your child.

Having a strong relationship with a provider is important for you and your child. Research shows that families with a **medical home** are more satisfied with their care and have better outcomes. A medical home is an approach to delivering primary health care through a team partnership that ensures healthcare services are provided in a high quality and comprehensive manner. A primary care provider (usually a physician or nurse practitioner) leads the medical home with the support and direction of the patient, the patient's family, clinic staff, community agencies, and other specialty care providers. When selecting a practice or interviewing a provider, be sure to ask about their approach to delivering care.

Core Components of a Medical Home

Accessible and Continuous

- Care is provided in the community.
- Changes in insurance providers or carriers are accommodated by the medical home practice.

Coordinated and Comprehensive

- Preventive, acute, specialty, and hospital care needs are addressed.
- When needed, a plan of care is developed with the patient, family, and other involved care providers and agencies.
- Care is accessible 24 hours a day, 7 days a week.
- The patient's medical record is accessible, but confidentiality is maintained.

Family Centered

- Families and individual clients are involved at all levels of decision-making.

Compassionate and Culturally Effective

- The patient and family's cultural needs are recognized, valued, respected, and incorporated into the care provided.
- Efforts are made to understand and empathize with the patient and family's feelings and perspectives.[1]

The Benefits of a Medical Home

Promotes Health Through Prevention

- Preventive services such as annual physical exams, developmental screening, health education, immunizations, well-child care, and other medical and community-based services help maintain optimal health.
- Women who have a regular source of health care are more likely to access prenatal care.[2]
- Regardless of age, sex, race, or socioeconomic status—all people can receive an array of acute, chronic, and preventive medical care services.[3]

Healthier Children and Families

- Among children with special health care needs, those with a medical home have less delayed care, fewer problems getting care, fewer unmet health needs, and fewer unmet needs for family support services.[4]
- In a study of medical homes among children with special health care needs, parents reported improved care delivery, a decrease in the number of missed workdays, and a decrease in hospitalizations.[5]

Reduce Healthcare Costs

- A child who receives care in a medical home is half as likely to visit an emergency room or be hospitalized.[6]

Well-Baby Care

Birth to 24 Months of Age

In the first year of life, babies undergo astonishing **growth and development**. Well-baby examinations are scheduled regularly during the first 2 years of life due to the rapid growth and change that occurs during infancy. During each visit the provider monitors, advises, and answers questions on a baby's growth and development.

The *Bright Futures* guidelines for preventive healthcare recommend that children visit a physician six times during the first year, three times in the second year of life, and annually thereafter.[6]

Provider Visit Schedule

	YEAR 1												YEAR 2												YEAR 3											
MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
VISIT	••	•		•		•			•			•			•			•						•												•

•• = within 1 week of birth and at 1 month

Well-child care continues through adolescence: your child should have a preventive health visit annually between ages 3 and 21 years. More visits may be necessary according to your child's needs.

Why is it important? Well-baby care encourages parents to follow a series of steps that strengthen the relationship between parents and their new baby and also lays a foundation for the baby's physical well-being and good mental health. Well-baby care also:

- Encourages and supports breastfeeding.
- Creates "teachable moments"—a window of time when parents are particularly receptive to learning about their child's behavior and development.
- Makes referrals for maternal depression.
- Encourages parents to stop smoking.
- Focuses on joint problem-solving.
- Charts milestones of your child's growth and social interactions.
- Triggers questions that should be addressed during subsequent visits.

What are all those visits for? While still in the hospital, at 2 to 4 days old, your newborn will experience his/her first checkup when a doctor or nurse will:

- Weigh your baby.
- Measure the length of his/her body.
- Measure the circumference of his/her head.
- Conduct a physical exam.
- Perform a hearing test. A simple test can detect if your baby has any hearing loss. This test is important because if not detected early, your baby's speech, language, brain development, and mental health could be affected.
- Examine blood drops taken from the bottom of your newborn's foot. These samples are dried and tested for such disorders as phenylketonuria (PKU), congenital hypothyroidism (CH), galactosemia, and sickle cell disease (SCD). Accurate screening:
  - √ Identifies affected babies quickly.
  - √ Ensures cases are not missed.
  - √ Helps start treatment early. Immediate treatment prevents serious and sometimes fatal complications.

Regular check-ups ensure your child is on the right path for growth, development, and behavior. Well-baby visits include a variety of **preventive services**. Each time you visit, your healthcare provider will do some or all of the following:
Collect information about your baby's medical and family history.

- Conduct a head to toe physical examination.
- Take a blood count between 9 and 12 months, as recommended.
- Screen your child's blood for lead at 9 to 12 months initially, then at 24 months and thereafter based on risk.
- Give a TB test, based on risk.
- Perform hearing and vision screening.
- Give proper immunizations.
- Provide nutrition advice.
- Give a dental referral.

As the parent, you will be the main source of information about your child's health for many years. Therefore, it is important to tell your healthcare provider any concerns you have about your child's growth, development, or behavior. During the visit, ask questions about your child's behavior. Some example questions are:

- Is my child getting the right amount of sleep?
- What can I do to help improve my child's communication skills?
- How can I keep my child safe in the car or at home?

Well-Child Care

3 to 10 Years of Age

What is it? Well-child care is a set of coordinated practices and activities that expand the focus of pediatric care for a young child to include greater emphasis on behavior and development—both the child's behavior and development and parents' understanding of behavior and developmental issues.

Why is it important? An annual preventive healthcare visit provides an opportunity to monitor a child's growth and development; to assess his or her behavior; to provide appropriate immunizations; to discuss important issues regarding prevention of injury and violence; and to answer a parent's questions about their child's health.

What are all those visits for?

Annual visits tell a story of your child's development through testing and record keeping. Your child's primary care provider relies on you to keep a personal chart of your child's height, weight, immunizations, and other medical information to add to his/her office record. During an annual check-up the provider will do some or all of the following:

- Give recommended immunizations.
- Screen for behavioral and mental health problems.
- Provide anticipatory guidance.
- Determine along with parents how to address developmental issues or health concerns.
- Conduct laboratory testing, including:
  - √ Urinalysis at age five.
  - √ Cholesterol screening, based on risk.
  - √ Iron deficiency screening, based on risk.
  - √ Lead screening, based on risk.

Remember to tell you child's primary care provider about:

- Any and all signs of illness.
- Any medications, herbs, or supplements such as vitamins that your child is taking.
- Any other doctor, chiropractor, acupuncturist, or therapist that your child is seeing.
- Any allergies or reactions to medicines that your child has.

Don't hesitate to report personal information. Feel free to talk about your beliefs and concerns about your child's health. You don't need to wait to be asked.

Follow-up! Once you leave the provider's office, follow-up.

- If you have questions, call the office.
- If your child has any problems with his or her medicine, call your child's primary care provider or pharmacist.
- If your child needs to see a specialist or get a test, make an appointment or ask your provider's office to make the appointment for you.
- If you do not hear from your child's provider about test results, call and ask. If you don't understand the results, ask what they mean.

Immunizations

Prevention is the key to fighting many infectious diseases. Children in the United States get routine immunizations to protect them against more than a dozen diseases. Some vaccines are given in combination with others. Most of them require multiple doses given at various intervals.

The majority of vaccines protect against serious, potentially fatal diseases that are most likely to strike when children are very young. It is critical that children receive all recommended immunizations on time. Children who are not fully immunized are at risk for serious illness and even death. They may also put other children and adults at risk.

Below is a list of immunizations and the ages at which a child should receive them. Some children with chronic illnesses or those in certain areas of the country may follow a different schedule.

- *Hepatitis B:* At birth, 1 to 4 months, and 6 to 18 months.
- *Diptheria, Tetanus, Pertussis (DPT):* At 2 months, 4 months, 6 months, 15 to 18 months, and 4 to 6 years.
- *Haemophilius Influenzae Type B:* At 2 months, 4 months, 6 months, and 12 to 15 months. Depending on the type of vaccine, the 6-month dose may not be needed.
- *Inactivated Poliovirus:* At 2 months, 4 months, 6 to 18 months, and 4 to 6 years.
- *Measles, Mumps, Rubella (MMR)*: At 12 to 15 months and 4 to 6 years. Children who have not previously received the second dose should receive it by 11 to 12 years.
- *Chickenpox (Varicella):* At 12 to 18 months if your child lacks a reliable history of chickenpox.
- *Pneumococcal disease (PPV vaccine):* Recommended in addition to PCV for certain high-risk groups. Ask your doctor.

Vaccine Preventable Disease

- Approximately 90% of chickenpox cases occur in children 1 to 14 years of age. Before the chickenpox vaccine was introduced in 1995, there were about 4 million cases each year in the United States.[7] With vaccination, the frequency of new cases has decreased in all age groups, especially in children ages 1 to 4 years.
- Globally, measles remains a leading cause of death, despite the availability of a safe and effective vaccine for the past 40 years. In 2006, an estimated 242,000 people worldwide died from measles. Measles vaccination in the United States has decreased the number of cases by 99%. The decade prior to the vaccination program had an estimated 3–4 million infected persons in the United States each year, with 400–500 dead, 48,000 hospitalized, and 1,000 with chronic disability from measles encephalitis.[8]
- Whooping cough (pertussis) affects between 5,000–7,000 people in the United States each year.[9]

- *Hepatitis A:* For children in selected areas or in certain high-risk groups. At 2 years or older, two doses at least 6 months apart.
- *Human papillomavirus (HPV vaccine):* Recommended for pre-adolescent females and young women aged 9 to 26.
- *Influenza:* Yearly for children 6 months or older with risk factors such as asthma, cardiac disease, sickle cell disease, HIV, and diabetes; and household members or persons in groups at high risk. Government experts recommend that all children aged 6 to 23 months receive an annual influenza vaccine. Immunization schedules for influenza may change. For the latest information, check with your doctor or go to: **www.cdc.gov/flu/**.

From time to time, immunization schedules change. For the latest schedule, check with your provider or go to: **www.cdc.gov/vaccines**.

Vision and Hearing

Vision should be tested before age 5. Your child also may need additional vision tests as he/she grows.

Vision warning signs. If your child complains of any of the symptoms listed below, make an appointment with your child's primary care provider immediately.

- Eyes turning inward (crossing) or outward.
- Squinting.
- Headaches.
- Not doing as well in school as before.
- Blurred or double vision.

Hearing warning signs. If at any age your child has any of the warning signs listed below, be sure to talk with your child's primary care provider.

- Poor response to noise or voice.
- Slow language and speech development.
- Abnormal-sounding speech.

Oral Health

Tooth decay is the most common chronic disease of childhood—5 times more common than asthma and 7 times more common than hay fever. It can cause pain, and make it difficult to eat, learn, and work. In many cases, however, oral health is overlooked by parents.

Your child needs regular **dental care** starting at an early age. Good oral health requires consistent daily care.

For babies:

- If most of your infant's nutrition comes from breast milk, or if you live in an area with too little fluoride in the drinking water, your child may need fluoride drops or tablets. Ask your child's primary care provider or your local water department how much fluoride is in your water. Then ask your child's primary care provider whether fluoride drops or tablets are necessary.

- Don't use a baby bottle as a pacifier or put your child to sleep with a baby bottle. This can cause tooth decay and ear infections.
- Keep your infant's teeth and gums clean by wiping with a moist cloth after feeding.
- When multiple teeth appear, begin gently brushing your infant's teeth using a soft toothbrush and a very small (pea-sized) amount of toothpaste with fluoride.

For children:

Continue regular dental visits as your child grows. Good oral health means good daily tooth care.

- Talk with your dentist about dental sealants to prevent cavities.
- Use dental floss to help prevent gum disease.
- Do not permit your child to smoke or chew tobacco and don't use it yourself.
- If a permanent tooth is knocked out, rinse it gently and put it back into the socket or in a glass of cold milk or water. Take your child and the tooth to a dentist immediately.

Growth and Development

Your child's doctor or nurse will measure his/her height and weight regularly. His/her head size will also be measured during the first 2 years of life. Keep track of his/her growth record. Keeping these measurements will help you and your provider know whether your child is growing properly.

Milestones

Children develop at different rates. The table below shows the ages by which most young children develop certain abilities. It is normal for a child to do some of these things later than the ages noted.

Infants (0 to 1 year of age)

- Language development.
- Focusing vision for the periphery or the corner to the center.
- Bonds of love and trust with parents.

2 months

- Smiles, coos.
- Watches a person, follows with eyes.

4 months

- Laughs out loud.
- Lifts head and chest when on stomach, grasps objects.

6 months

- Babbles, turns to sound.
- Rolls over, supports head when sitting.

9 months

- Responds to name, plays peek-a-boo.
- Sits alone, crawls, pulls up to standing.

Toddlers (1 to 3 years of age)

1 year

- Waves bye-bye, says "mama" or "dada."
- Becomes more mobile and aware of surroundings.
- Walks when holding on, picks up objects with thumb and first finger.

18 months

- Says three words other than "mama" or "dada."
- Scribbles.
- Shows great independence, defiant behavior, and imitates behavior of others.
- Walks alone, feeds self using spoon.

2 to 3 years

- Follows two- or three-phrase commands, recognizes names, forms simple phrases, follows simple instructions and directions, refers to self by name.
- Imitates actions of adults or playmates.
- Expresses a wide range of emotions.
- Runs well, walks upstairs without help.

Preschool (3 to 5 years or age)

- Becomes more independent.
- Knows age, helps button clothing, washes and dries hands.
- Throws ball overhand, rides tricycle.
- Knows first and last name and gender identity, tells a story, names four colors, counts 10 objects.
- Balances on one foot, uses children's scissors.
- Plays with other children.
- Sings a song.

Children continue to grow and change rapidly. As children develop they experience emotional, social, mental, and cognitive changes. These changes are a normal and healthy part of human growth.

Emotional and social changes include:

- More independence from parents.
- Stronger sense of right and wrong.
- Growing desire to be liked and accepted by friends.

Mental and cognitive changes include:

- Rapid development of mental skills.
- Greater ability to describe experiences, talk about thoughts and feelings.
- Less focus on one's self and more concern for others.

Nutrition for a Healthy Diet

Birth to 2 years of age:

- Breast milk is the single best food for infants from birth to 6 months of age. It provides good nutrition and protects against infection. **Breastfeeding** should be continued for at least the first year, if possible. If breastfeeding is not possible, iron-enriched formula (not cow's milk)

should be used during the first year of life. Whole cow's milk can be used to replace formula or breast milk after 12 months of age.

- Begin suitable solid foods at 4 to 6 months. Use **iron-rich foods**, such as grains, iron-enriched cereals, and meats. Most experts recommend iron-enriched infant rice cereal as the first food.
- Start new foods one at a time to make it easier to identify problem foods. For example, wait one week before adding each new cereal, vegetable, or other food.
- Do not give honey or corn syrup to infants during their first year.
- Do not limit fat during the first 2 years of life.

Two years or older:

- Provide a variety of foods, including plenty of fruit, vegetables, and whole grains.
- Use salt (sodium) and sugars in moderation.
- Encourage a diet low in fat, saturated fat, and cholesterol.
- Help your child maintain a **healthy weight** by providing proper foods and encouraging regular exercise.

A child can tell you what he/she likes and what he/she is hungry for by the age of 5 or 6. Try to accommodate your child's tastes as much as possible, as long as the choices are reasonable. Boys and girls between 6 and 10 years of age require about 1,800 to 2,400 calories a day. This number increases considerably as children head into puberty. Girls require about 200 calories per day more between the ages of 10 and 12. Boys need about 500 calories per day after 12 years of age. A regular diet should include:

- Whole-grains (6 to 11 servings) (e.g., whole-wheat breads, cereals, pastas, and brown rice).
- Vegetables (3 to 5 servings).
- Fruit (2 to 4 servings).
- Dairy products (3 to 4 servings).
- Meat, fish, poultry, and beans (2 to 3 servings).

After age 2, you should begin to reduce your child's **dietary fat** consumption. In a healthy diet approximately 30% of total calories come from fat. Some ways to cut-back on fat are:

- Switch from whole milk to fat free or nonfat (skim) milk or low-fat (1%) milk.
- Serve more fish and poultry and cut back on red meat.
- Reduce the use of butter and margarine.
- Use low-fat cooking methods, such as baking, broiling, grilling, poaching, and steaming.
- Serve fiber-rich foods, including whole-grain breads, cereals, dried peas, beans, fruits, and vegetables. Dietary fiber may reduce the risk of heart disease and cancer later in life.

It is also important to monitor your child's **sugar intake**. Too much sugar can cause dental caries (cavities) and other oral health problems and, in the long-term, lead to excess weight gain and type II diabetes. Ways to reduce your child's sugar consumption include:

- Serve water instead of juice or soda pop.
- Dilute juice with extra water.
- Use less sugar when cooking.
- Substitute fruit for cookies or other sweets.
- Buy low-sugar cereals. If your child likes sweet cereals, try adding blueberries or other nutritious fruits.

Children with Special Health Care Needs

Children with **special health care needs** require more healthcare services than other children (for example, more visits, specialized treatments, or prescription drugs), because they have (or are at risk for) a chronic physical, developmental, behavioral, or emotional condition. 21.8 percent of U.S. households with children have at least one child with special health care needs.

Special health care needs result from a wide range of chronic illnesses, disabilities, and emotional or behavioral health problems, such as severe asthma, autism, ADHD, cerebral palsy, cystic fibrosis, diabetes, Down syndrome, mental retardation, sickle cell anemia, and spina bifida. In fact, there are over 3,700 chronic conditions that affect children.

- Families in every demographic group, including all income levels and ethnicities, have children with special health care needs.
- Boys are more likely to have special health care needs than girls—16.1% versus 11.6%, respectively. The prevalence of special health care needs increases with age. For young children up to age 5 years, the prevalence of special health care needs is just under 8%. That percentage increases to 14.6% for children aged 6 to 11; and among adolescents (children aged 12 to 17 years), the prevalence rises to 15.8%.[10]

One group of children with special health care needs are children with developmental problems. A developmental delay, disorder, or disability is a condition that hinders a child from developing age-appropriate psychological or motor skills such as learning, communicating with adults, playing with other children, or walking. Developmental problems can begin at any age during childhood. These conditions can result in delayed learning, a physical or mental impairment, or a permanent disability.

Poor outcomes associated with developmental delays and disabilities include:

Reduced educational attainment:

- Poor school performance
- Reduced school attendance

Poor overall health status:

- Increased rate of injuries.
- Increased rate of emergency room visits, office visits, and hospitalizations.
- Longer hospital stays.
- Higher rates of mental illness and behavioral problems

Social problems:

- Poor peer relationships.
- Increased risk of substance abuse.
- Increased risk of delinquency and violence in adolescence and adulthood.

Early intervention services are critical for children with special health care needs, particularly those with developmental problems. If your child has a special need, be sure to talk to his/her provider about medical and social services that can help your family.

Key Health Risks: Infants and Children

Sudden Infant Death Syndrome

Sudden Infant Death Syndrome (SIDS) is the leading cause of death in children between 1 month and 1 year of age. Most SIDS deaths happen when babies are between 2 and 4 months old.[11]

Injuries and Poisoning

- **Poison.** Of the more than 2 million poison exposures that occur each year in the United States, 50.7% occur among children younger than age 6. The poisons that your child is most likely to ingest come from common household goods like cosmetics and personal care products (e.g., shampoo), cleaning products (e.g., drain cleaner), pain relievers, and plants.

Safety Guidelines

Protect your young child. In 2003, 782 children aged 0 to 14 years died in drowning accidents. More than 4,700 pedestrians died from traffic-related injuries, and another 70,000 sustained nonfatal injuries. To protect your child follow these safety guidelines:

- Use a car seat at all times until your child weighs at least 40 pounds.
- Use a rear-facing car seat until your child is at least one year old and weighs at least 20 pounds.
- Use the right car seat for your vehicle and for your child's weight. Read the car seat and vehicle manufacturer's instructions about installation and use properly.
- Older children should use car seat belts and sit in the back seat at all times until they are 8 years old or at least 4 feet 9 inches tall.
- Use safety gates across stairways (top and bottom) and guards on windows above the first floor.
- Use fences that go all the way around pools, and keep gates to pools locked.
- Keep hot water heater temperatures below 120F.
- Provide constant supervision for babies. Block access to stairways and to objects that can fall (such as lamps) or cause burns (such as stoves or electric heaters).
- If you use a baby walker, use one that will not fit through a standard doorway or has grippers to stop it at the edge of a step.
- Keep objects and foods that can cause choking away from your child. This includes things like coins, balloons, small toy parts, hot dogs (unmashed), peanuts, and hard candies.

Source: Agency for Healthcare Quality. Your child in the world. Available at: http://www.ahrq.gov/ppip/childguide/child.htm. Accessed on April 14, 2007.

- **Drowning.** Drownings are the leading cause of injury death for young children ages 1 to 4, and three children die every day as a result of drowning.
- **Injuries.** More children die from injuries than any other cause. Fortunately, most injuries can be prevented if simple guidelines are followed. Your child's primary care provider can suggest ways to protect your child from injury.

Environmental Diseases

Rashes, irritations, and other environmental diseases can become serious, but are easily treated if caught in an early stage. If your child develops a rash or irritation that doesn't resolve in a few days on its own, or looks serious, call your child's primary care provider for advice. A rash or irritation could be caused by one of the following: eczema, impetigo, lice, ringworm, diaper rash, or thrush.

Lead

Approximately 310,000 children between the ages of 1 and 5 years have elevated blood lead levels, and more than 4% of children in the United States suffer from lead poisoning.[12] The most common cause of lead poisoning today is old lead-based paint. Lead has not been used in house paint since 1978. However, many older houses and apartment buildings (especially those built before 1960) still have lead-based paint on their walls. Recently, popular toys and cosmetics imported from China have been contaminated with lead. Lead can harm your child, slowing physical and mental growth and damaging many organs. The most common way your child may get lead poisoning is by exposure to old house paint that is chipping or peeling. Screening for elevated blood levels helps identify children exposed to lead who need intervention to reduce their blood lead levels.

Caution:
Toddlers explore their world by putting things in their mouths. Children can get lead poisoning by chewing on pieces of peeling paint or by swallowing house dust or soil that contains tiny chips of leaded paint.

Overweight and Obesity

Data from the 2007-2008 National Health and Nutrition Examination Survey (NHANES), indicates that approximately 17% of children and adolescents between the ages of 2 and 19 are obese.[13] Overweight children are much more likely to become overweight or obese adults than children who maintain healthy weights. They are also at risk for serious diseases such as type II diabetes, high blood pressure, and heart disease. If your child is more than 20% above the ideal weight for height and age, check with your primary care provider.

Lack of Physical Activity

To ensure a healthy weight, encourage your child to exercise regularly and keep a healthy diet. Children should get about 60 minutes of physical activity every day.[14]

- Encourage your child to participate in sports.
- Encourage involvement in activities they can enjoy into adulthood (for example, walking, running, swimming, basketball, tennis, golf, dancing, and bicycle riding).
- Plan physical activities with family or friends; exercise is more fun with others.
- Limit TV watching to less than 2 hours per day. Encourage going to the playground, park, gym, or a swimming pool instead.
- Physical activity shouldn't mean competition. Don't make winning the only goal.

Many communities and schools offer exercise or sports programs—find out what is available for your child.

Activate Your Child

Obesity is a serious health issue. To prevent overweight and obesity engage your children in a health-promoting lifestyle. In one study, children of sedentary parents (a.k.a. couch potatoes) were more likely to gain weight and become overweight than children of active parents. The more you move, the more calories you burn. Examples of fun activities that will help your family become active are listed below.

- ***Walk the walk:*** Map a nearby park with checkpoints, mapping an expedition course. Stay together, explore the terrain, study map clues, and look for secret treasure. Take turns navigating to each point on the map. On each walk progress to a more challenging trail or hike. Use bugs, animals, or flowers as your treasure. You can't entertain a young child much better than finding a colorful salamander under a log or rock.
- ***Ten minute sports:*** Don't force adult exercise on children. Take advantage of their natural tendency for intermittent play. A game of tag is a perfect example. Children's bodies are designed to spring and rest since they are easily distracted and incapable of long periods of focused activity.
- ***Throw a sports party:*** Instead of a pin-the-tail on the donkey birthday party, go roller-skating or ice-skating, got to a laser tag center, wall-climbing gym, or indoor playground center. Do these activities anytime with the family just because you feel like it.
- ***Race for home:*** Give your child a head start and race home from the corner store, from the end of the block, or race around the outside of the house. You can do the same with calisthenics—you do 10 crunches, and your child does five. See who can complete them first.
- ***A list of chores:*** Younger children like to be helpful. They enjoy helping with household chores. Ask them to help you make the beds, fold laundry and put it away. Set the table, put the dishes in the dishwasher—all physical activities that get your heart rate up, stretch your body, and build muscles.

Source: Readers Digest. *47 Fun ways to a healthier and more active family*. Available at: www.rd.com/. Accessed on March 17, 2010.

Foodborne Illness

Approximately 76 million cases of foodborne illness are reported each year in the United States.[15] Foodborne disease is caused by consuming contaminated foods or beverages. An outbreak of foodborne illness occurs when a group of people consume the same contaminated product and two or more of them develop the same symptoms. For example, an outbreak can occur when food is left out at room temperature for many hours. Cooking it may not affect the bacteria if prepared at too low a temperature. **Handwashing** is the most effective way to avoid the spread of bacteria.

Foodborne diseases are infections, caused by a variety of bacteria, viruses, and parasites. Other diseases are poisonings, caused by harmful toxins or chemicals that have contaminated the food, for example, poisonous mushrooms. Different diseases have different symptoms; however, most people experience nausea, vomiting, abdominal cramps, or diarrhea.

The most commonly recognized foodborne infections are those caused by the bacteria *Campylobacter, Salmonella,* and *E. Coli 0157:H7* and by a group of viruses called calicivirus, also known as the Norwalk and Norwalk-like virus.

- *Campylobacter* is a bacterial pathogen that causes fever, diarrhea, and abdominal cramps. It is the most common cause of diarrheal illness in the world. Eating undercooked chicken, or other food that has been contaminated with juices dripping from raw chicken is the most frequent source of this infection.

- *Salmonella* is also a widespread bacteria with symptoms that include fever, diarrhea, and abdominal cramps. In persons with poor underlying health or weakened immune systems, it can invade the bloodstream and cause life-threatening infections.
- *Escherichia coli O157:H7* infections can spread through contaminated food, contaminated drinking water, contaminated swimming water, and from toddler to toddler at a daycare center. Depending on how it spread, measures to stop other cases range from removing contaminated food from stores, chlorinating a swimming pool, or closing a daycare center.
- *Calicivirus*, or Norwalk-like virus, is an extremely common cause of foodborne illness, though it is rarely diagnosed. It causes acute gastrointestinal illness, usually with more vomiting than diarrhea. It usually resolves within two days. It is believed that Norwalk-like viruses spread primarily from one infected person to another. Infected kitchen workers can contaminate a salad or sandwich as they prepare it with the virus on their hands; infected fishermen have contaminated oysters as they harvested them.

Diarrhea or vomiting can lead to **dehydration** when body fluids and salts (electrolytes) become low. Replacing lost fluids and electrolytes are important. If diarrhea is severe, call your healthcare provider for advice.

Sun Exposure and Skin Cancer

The most common form of cancer in the United States is skin cancer. Skin cancer is a preventable disease. Children are especially sensitive to the sun due to their delicate skin. Protecting children from the sun not only helps prevent painful rashes and sun burns, it also helps prevent skin cancer later in life, as 50% of a person's lifetime **sun exposure** occurs before the age of 18.[16]

- Encourage children to play in the shade, especially from 10am–4pm.
- Infants should be kept out of the sun entirely.[16]
- Use a high SPF on children[17]and reapply sunscreen often throughout the day.
- Ensure that protective clothing is always worn in the sun.[17]

If you smoke, the most important thing you can do for your child's health is to quit. Ask your primary health care provider about getting help to quit or call 1-800-quitline to speak to a tobacco cessation counselor for free.

Tobacco Use

Exposure to environmental smoke—from cigarettes, cigars, or pipes—is a serious health hazard for your child. According to the Centers for Disease Control and Prevention, exposure to **secondhand smoke** is associated with higher rates of sudden infant death syndrome (SIDS), ear infections, asthma, bronchitis, and pneumonia in young children. If you smoke, the most important thing you can do for your child's health is to quit. Ask your doctor about getting help to quit. Never let yourself or other adults smoke around your child—in your home, in your car, anywhere!

Child Abuse

Child abuse is serious problem that can happen in any family. The scars, both physical and emotional, last a lifetime. Because children can't protect themselves, adults must protect them.

Sexual child abuse prevention:

- Teach your child not to let anyone touch him or her inappropriately: Tell your child to say "NO" and run away from sexual touches.
- Take reports by your child about physical or sexual abuse seriously.
- Report any abuse to your local or State child protection agency.

Parental child abuse:

- Post your local child abuse hotline in a conspicuous place near the phone.
- If you feel angry and out of control, leave the room, take a walk, take deep breaths, or count to 100. Don't drink alcohol or take drugs. These can make your anger harder to control. If you are afraid you might harm your child, get help immediately.
- Take time for yourself. Share childcare between parents, trade babysitting with friends, or use daycare.

Family Resources on the Web

The internet can help you find healthcare information for you and your family. Click on the links below to begin your search.

Finding a Medical Home for Your Family

KidsHealth, an organization sponsored by the Nemours Foundation, is a website devoted to helping parents navigate medical care for their family. The site explains different options and suggests how to search for a healthcare provider for your child:
http://www.kidshealth.org/parent/system/doctor/find_ped.html

The ***American Academy of Family Physicians*** is the national association of family doctors. Their website has general information about current family medicine topics as well as a sister page specifically designed for patients to learn about diseases and conditions as well as health tools:
http://www.aafp.org/ and **http://familydoctor.org/**

The ***American Academy of Pediatrics*** is an organization of pediatricians committed to the attainment of optimal physical, mental, and social health and well-being for all infants, children, adolescents, and young adults. Their website contains general information and publications related to child health, guidelines on pediatric issues, and a link to locate a pediatrician: **www.aap.org**

The ***American Medical Association*** will help you search for a physician in your area:
http://www.ama-assn.org/aps/amahg.htm

The mission of the ***National Association of Pediatric Nurse Practitioners (NAPNAP)*** is to promote optimal health for children through leadership, practice, advocacy, education and research. Their website contains tips and information for parents about immunizations, breastfeeding, bottle feeding, eating well, and the role of the PNP in serving children & families: **http://www.napnap.org/**

The ***National Association of County and City Health Officials*** will help you find your state's local health departments: **http://www.naccho.org/about/LHD/**

The ***Bureau of Primary Health Care***, part of the Health Resources and Services Administration of the U.S. Department of Health and Human Services, can help you find a medical clinic near you: **http://bphc.hrsa.gov/**

Maternal and Child Health (General)

The ***Maternal and Child Health Bureau*** is a component of the Health Resources and Services Administration (HRSA) within the Department of Health and Human Services (DHHS). The MCHB provides national leadership to reduce disparities, assure the availability of quality care, and strengthen the Nation's maternal and child health infrastructure in order to improve the physical and mental health, safety, and well-being of women, infants, children, adolescents, and their families (including fathers and children with special health care needs). References and materials are available on their website at: **www.mchb.hrsa.gov**

The ***MCH Library*** at Georgetown University provides accurate and timely information, resource guides, publications, databases, and links on maternal and child health topics: **www.mchlibrary.org**

The ***National Institutes of Health*** website provides a wide range of topics on child and adolescent health: **www.health.nih.gov/**

Children with Special Health Care Needs

Family Voices is a national grassroots network of families which advocates for health care services and provides information for families with children and youth with special health care needs: **www.familyvoices.org**

The ***Healthy and Ready to Work National Center***, sponsored by the Maternal and Child Health Bureau provides information and resources to help youth with special health care needs transition to adult health: **www.hrtw.org**

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BENEFICIARY EDUCATION FACT SHEET #5

Information for Beneficiaries on Adolescent Health

During the transition from childhood to adulthood, adolescents establish patterns of behavior and make lifestyle choices that affect both their current and future health. The purpose of this fact sheet is to help parents develop a preventive framework that will keep their adolescent in good health as he/she becomes an adult. Also included is a look at the family role in health care, parents' interaction with their children, key health risks, and role modeling.

The Family Role in Health Promotion

As a parent, you have the opportunity to shape your child's health. Role modeling healthy behaviors is important in facilitating your adolescent's successful transition from childhood to adulthood.

Work Together—Role model. Communication is the cornerstone of a relationship with your child or teen. Many parents find it difficult to communicate with their children, particularly during the teenage years. To better communicate with your child[1]:

- Start early—talk to children throughout their entire lives.
  - If you have a hard time finding topics, discuss problems in the news as a starter.

- Be available—set aside enough time to deal with the subject at hand.
  - Don't let the TV, telephone, or other distractions interrupt.
  - Eat dinner together as a family, as often as possible.
- Engage adolescents with non-threatening questions.
  - Ask your teen's permission first if you want to start a discussion.
  - Avoid "why" questions. They put adolescents on the defensive.
  - Encourage teens to think through the issues out loud without challenging their point of view.
- Be a good listener.
  - Listen for tone as well as words. Watch body language.
  - Validate what you can when you listen. There will be opportunities for dissent later.
  - Encourage teens to express their feelings.
  - Be ready to hear opinions you may not agree with.
  - Resist the urge to lecture or nag.
  - Ask questions when asked but don't pretend you know all the answers and admit when you are wrong. Let teens know when you have to go to other sources for information and then follow-up.
  - Recognize and thank him or her for trusting you to listen.
- Be a role model for decision-making strategies, such as defining the problem and looking at the pros and cons.
- Be a role model for good communication with others.

Spend time with your child. Not having enough time together with their parents is a top concern among teens. Approximately 15% of 8th graders, 20% of 10th graders, and 30% of 12th graders report rarely or never eating dinner with their family.[1]

- Find ways to spend time with your adolescent, even if it is in brief increments. For example, have your teen drive you to the grocery store and help you shop, or pick your teen up after a sports game and take him or her out for a healthy snack.

Adolescent Health

13 to 18 Years of Age

Well-child preventive health visits continue though adolescence. These visits are essential in order to maintain and promote the health of your growing child. At some or all of your adolescent's well-child visits, his/her primary care provider will:

- Conduct a physical examination that will include: medical history and physical, including height, weight, blood pressure, vision, hearing screening, and a developmental/behavioral assessment.
- Review diet intake; physical activity; tobacco, alcohol, and drug use; sexual activity; and discuss the effects of smoking, drinking, and drug use.
- Perform laboratory testing, including:
  - Urinalysis, once between 11 and 18 years of age.
  - Cholesterol screening, based on risk.
  - Iron deficiency, based on risk.

- Diabetes screening, based on risk.
- Sexually transmitted infection (STI) screening, based on risk.
- Lead screening, based on risk.
- TB test, based on risk.

Immunizations

If your child missed any vaccinations as an infant or young child, it's time to make up for it now. Here is a review:

- *Chickenpox (varicella)* if not previously received. Chickenpox immunization is recommended for teens and adults who are not already immune to the virus. An unvaccinated child with no history of chicken pox should be vaccinated between 11 and 12 years of age. Unvaccinated adolescents 13 years of age and older should receive 2 doses of varicella vaccine at least 1 month apart.
- *Diptheria, tetanus, and pertussis booster (DPT)* is usually only given as a booster shot or if it has been at least 5 years since the last (DPT) dose was received. Two new combination booster vaccines that include pertussis are now available.
- *Hepatitis A (Hep A)* may be recommended for adolescents who live in communities where outbreaks of hepatitis A have recently occurred.
- *Hepatitis B (Hep B)*: If not previously received, the hepatitis B vaccine series should be given to anyone 18 years of age or younger.
- *Human papillomavirus (HPV)*: If not previously received, your adolescent should receive the HPV vaccine.
- *Influenza inactivitated vaccine (flu shot) or nasal spray vaccine (FluMist®)*: Adolescents should be vaccinated annually or as otherwise recommended.
- *Measles, mumps, and rubella (MMR)* should be given if not previously received.
- *Meningococcal vaccine*, also called Menactra, is recommended for all adolescents between 11 and 12 years of age.
- *Pneumococcal polysacchyaride vaccine (PPV)* is recommended for adolescents with certain chronic diseases or who live where there is increased risk for infection.

Oral Health

Teens need to continue the good **oral hygiene habits** that were started in childhood. Remind your teenager to brush with a fluoride toothpaste at least twice a day and floss their teeth at least once a day. Take your child to see a dental professional every 6 months or as otherwise recommended. As your teenager matures, encourage he/she to take responsibility for his/her own dental appointments.

- Find out if your teenager's usual source of drinking water is fluorinated. If not, ask your dentist about fluoride varnishes or supplements.
- Nutrition matters! Be a role model. Encourage teens to eat regular nutritious meals and to make smart food choices.
- Help your teen learn to say "NO" to tobacco and alcohol. If you need help, ask for it.
- Be sure your teen uses a mouth guard and helmet to prevent injuries during sports activities.

Key Health Risks: Adolescents

Poor Nutrition and a Lack of Physical Activity

Good nutrition is just as important for adolescents as it is for children. Yet, many adolescents do not have healthy diets. For example, almost 80% of young people do not eat the recommended servings of fruits and vegetables.[2] Teenage boys who are active require about 2,800 calories per day and should eat the highest range of servings listed below. Teenage girls who are active require about 2,200 calories per day and should eat servings in the middle of the range listed below.

The rate of growth in adolescence is second only to the rate in infancy. Poor eating habits during the teen years may lead to both short- and long-term health consequences including obesity, osteoporosis, and sexual maturation delays.

- Vegetables: 3 to 5 servings.
- Fruits: 2 to 4 servings.
- Whole grains: 6 to 11 servings (e.g., whole-wheat breads, cereals, and pastas, and brown rice).
- Milk, yogurt, and cheese: 2 to 3 servings (teens should have 3 or more servings of foods rich in calcium).
- Meats, poultry, fish, dried beans and peas, eggs, and nuts: 2 to 3 servings.

Eating the right types of food is important. A poor diet, one that is deficient in protein or key nutrients, can put an adolescent at risk for a host of health problems. For example, too little food or the wrong food can affect sexual maturation and growth. Your adolescent's primary care provider should be familiar enough with your teenager to detect when there are **dietary deviations** or risk factors for an eating disorder. A diet and nutritional history is necessary when assessing adolescents during check-ups. Evaluation of adolescent nutrition should include:

1. Weighing and measuring and comparing to previous values. Make note of any weight loss, excessive weight gain, or failure to grow.
2. Amount of physical activity.
3. Quality, quantity, and number of meals per day.
4. Sexual maturation and menstruation history.

Remember to encourage your teen to eat healthfully:

- Always keep healthy snacks such as yogurt, fruit, and cut vegetables on hand.
- Ask your teen to help you shop or cook once a week so that they learn healthy ways to prepare food.
- Try to select restaurants that offer healthy meals for family outings.

Today, nearly 15% of American children and adolescents aged 2 to 19 years are considered overweight and an additional 16% are considered obese.[3, 4] Children become overweight or obese when they take in too much food, and expend too little energy. Because most people in the United States are sedentary (they sit) most of the day, it takes a special effort to make sure physical activity is an important part of your child's daily routine.

Physical activity helps self-esteem and reduces stress. It promotes a positive self-image and a sense of achievement. The habits formed in youth make a difference when we get older. Staying fit lowers the risk of heart disease, stroke, and diabetes.

The U.S. Surgeon General recommends **moderate to vigorous physical activity** each week. In 2007, only 35% of 9th to 12th graders participated in the recommended 60 minutes of physical activity per day on at least five days out of the week.[5] Without adequate physical activity, adolescents are as risk for overweight, obesity, diabetes, and—later in life—cardiovascular disease, osteoporosis, and other problems.[2]

Every teen can choose a type of physical activity for optimal health. Some teens enjoy and participate in sports. Others may feel awkward about their bodies, and don't want to look clumsy in front of their peers. Alternatives to team activities include weight training, jogging, biking, roller blading, skateboarding, dancing, and swimming. Teens need to be encouraged to meet the following recommendations:

- Moderate physical activity, equivalent to brisk walking, 30 minutes a day, at least 10 minutes at a time, 5 or more days a week.
- Vigorous physical activity—such as jogging—for at least 20 minutes a day, 3 or more days a week.

Alcohol and Drug Abuse

Alcohol abuse is the third leading preventable cause of death in the United States, and is a factor in approximately 41% of all deaths from motor vehicle crashes. Alcohol is the most commonly used substance among adolescents.[6]

- In 2008, rates of current alcohol use were 3.4 percent among persons aged 12 or 13, 13.1 percent of persons aged 14 or 15, 26.2 percent of 16 or 17 year olds, 48.7 percent of those aged 18 to 20, and 69.5 percent of 21 to 25 year olds.[7]
- About 10% of 8th graders, 20% of 10th graders, and 30% of 12th graders report binge drinking (consuming 5 or more drinks in a row) at least once in the past two weeks.[8]
- About 2% to 3% of teens in grades 8, 10, and 12 say they used methamphetamines in the past month.[8]

Tobacco Use

Each day in the United States nearly 4,000 adolescents under the age of 18 try a cigarette and every year nearly 1,140 adolescents become regular smokers.[9] Tobacco use contributes to many diseases and is the primary underlying cause of death in the United States. Each year, approximately 440,000 individuals die as a result of smoking,[10] accounting for 20% of all deaths in the United States annually.[11] Nearly 80% of all adult smokers began smoking before they turned 18 years old.[12]

- Teen tobacco use impairs how the lungs grow and function, increases respiratory illness, and increases the risk of cardiovascular disease.
- Teens who smoke cigarettes are more likely to take risks such as ignoring seat belts, getting into fights, and carrying weapons than teens who do not smoke.
- In 2007, 8% of high school reported frequently smoking cigarettes.[13]
- Peer pressure is the greatest influencing factor in teen tobacco choices.

Among adolescents who already smoke, 40% believe they are **addicted**.[14] Recent research has shown that addiction occurs after fewer cigarettes over a shorter period than previously thought. Girls seem to get hooked quicker than boys: on average it takes a girl 3 months and a boy 6 months to become addicted to nicotine.[14] In addition to the negative health effects of tobacco use, smoking increases the risk of other high-risk behaviors. Compared to teens who do not smoke, adolescent smokers are:

- 3 times more likely to use alcohol.
- 8 times more likely to use marijuana.
- 22 times more likely to use cocaine.

Talk to your child about the dangers of **tobacco** early and often. Research shows that the immediate adverse health effects of tobacco use (e.g., "smoking makes your teeth turn yellow") are more salient to teenagers than the long-term effects (e.g., "if you smoke you will get lung cancer), but both messages are important to communicate. Be a good role model and don't smoke yourself or let anyone smoke around your child. Make it clear that your home, yard, and car are **smoke-free areas**.

Injury and Violence

Approximately 72% of all deaths among adolescents aged 10 to 24 years are attributed to injuries from only four causes: motor vehicle crashes (30%), unintentional injuries (15%), homicide (15%), and suicide (12%).[15]

Unintentional Injuries

Unintentional injuries are the leading cause of death among 1- to 44-year-olds in the United States.[15] Most unintentional injuries are not accidents because they can be prevented.

Motor vehicle crashes are the leading cause of death among 15 to 19-year-olds.[16] Many of these injuries result from:

- Not wearing a seatbelt.
- Riding a bike or motorcycle without a helmet.
- Drinking and driving.
- Riding with a drunk driver.

Drowning is the second leading cause of unintentional death in the United States. Drowning can occur in pools, lakes, and rivers and often occurs because a teen:

- Did not wear a life jacket.
- Participated in an activity without protective gear.

To prevent unintentional injuries, talk to your teen about basic **safety precautions**.

- Remind them often of how important it is to wear a seat belt and helmet, and model good behavior by always wearing one yourself.
- Talk to your teen about the dangers of drinking and driving. Reassure them that they can always call you or another responsible adult if they find themselves in a situation where their driver is drunk.

Violence

Violence affects the lives of many youth. Some of the risk factors for youth delinquency and violence include:

- **Abuse.** Children who have been physically or sexually abused are more likely than other children to become violent teens and adults.
- **Domestic violence.** Youth who witness domestic violence are more likely to use violence during their lifetime and are at greater risk for low self-esteem, depression, and substance abuse.
- **Poor role-modeling.** Parents who are involved in criminal activities or abuse drugs are more likely to have violent teens.
- **Bullying** and "dissing" are perceived by children, parents, teachers, and school administrators as major contributors to youth violence.

Violence of all types can result in severe injuries and even death. Highly associated with these injuries are **risk behaviors** such as[16]:

- Physical fights.
- Carrying and using a weapon.
- Dating violence.
- Fighting.
- Forced sexual intercourse.
- Bullying.
- Making a suicide plan.

Adolescents who resist violence:

- Are more likely to report that they do not have access to a gun.
- Are protected because parents are home more frequently at key times of the day.
- Are protected by strong connections with families, schools, and friends.
- Are taught ways of dealing with conflict that don't involve violence.
- Grew up with structure and household rules.
- Received a lot of attention during infancy.
- Report that teachers treat them fairly, that they feel a part of the school, and that other kids are not prejudiced.

Mental Illness and Emotional Disturbance

Mental illness is a serious yet under-recognized health problem. An estimated 14-20% of children and adolescents, about one in every five,[17] have a diagnosable emotional or behavioral health disorder, but less than a third get help for their problems.[18] Mental health disorders in children and adolescents are caused by biologic and environmental factors. Examples of biological causes are genetics, chemical imbalances in the body, or damage to the central nervous system, such as a head injury. Environmental factors include:

- Exposure to environmental toxins, such as high levels of lead;
- Exposure to violence, such as witnessing or being the victim of physical or sexual abuse, drive-by shootings, muggings, or other disasters;
- Stress related to chronic poverty, discrimination, or other serious hardships; and
- The loss of important people through death, divorce, or broken relationships.

Signs of Mental Health Disorders

Children and adolescents with mental health issues need to get help as soon as possible. A variety of signs may point to a mental health disorder or serious emotional disturbance, including:

- Sadness and hopelessness for no apparent reason, that doesn't go away.
- Very angry most of the time, crying, or overreacting to things, or chronic irritability.
- Feeling worthless or guilty often.
- Often anxious or worried.
- Unable to get over a loss or death of someone important.
- Extremely fearful.
- Constantly concerned about physical problems or appearance.
- Frightened that his or her mind either is controlled or out of control.
- Exhibits big changes, such as:
  - Declining performance in school.
  - Losing interest in things once enjoyed.
  - Unexplained changing in sleep or eating patterns.
  - Avoiding friends or family, wanting to be alone all the time.
  - Daydreaming too much; not completing tasks.
  - Feeling life is too hard to handle.
  - Hearing voices that cannot be explained.
  - Experiences suicidal thoughts.
- Begins self-abusing or abusing others by:
  - Using alcohol or other drugs.
  - Eating large amounts of food, then purging, or using laxatives to avoid weight gain.
  - Dieting or exercising obsessively.
  - Violating the rights of others or constantly breaking the law.
  - Setting fires.
  - Doing things that could be life-threatening.
  - Killing animals.

Source: Substance Abuse and Mental Health Services Administration. National Mental Health Information Center. Child and adolescent mental health. Available at: http://mentalhealth.samhsa.gov/publications/allpubs/CA-0004/default.asp. Accessed on April 12, 2007.

Finding help is critical

Your family can find the right services for your child if you:

- Get accurate information from hotlines, libraries, or other sources.
- Seek referrals from professionals.
- Ask questions about treatments and services.
- Talk to other families in your community.
- Find family network organizations.

Important messages about child and adolescent mental health:

- Every child's mental health is important.
- Many children have mental health problems.
- These problems are real, painful, and can be severe.
- Mental health problems can be recognized and treated.
- Caring families and communities working together can help.
- Information is available; call 1-800-789-2647 or visit **http://mentalhealth.samshsa.gov**.

Sexual Risk Behaviors and Unintended Pregnancy

Sexually transmitted infections (STIs) are spread through sexual contact with another person who is infected. In the United States alone, there are approximately 19 million new STI cases each year, about half of which occur among youth ages 15-24 years.[19] Many STI's are curable. Other STI's have treatable symptoms, but cannot be cured. All infections are dangerous and introduce risk. For example, untreated STI's, with or without symptoms, put adolescents at increased risk for HIV. Young women affected by STI's, such as gonorrhea and chlamydia, are two to five times more vulnerable to HIV infection than women without STI's.

STI's go unteated for three main reasons:

- Some STI's show no symptoms.
- Long-term diseases such as sterility, pain, and certain cancers may not appear until years after the initial infection.
- Even though STI's one of the most common types of infection in the United States, there is often shame and embarrassment about STI's, so parents, adolescents, and healthcare providers don't talk about them.

Unintended pregnancy is another risk factor associated with adolescent sexual activity and unprotected sex. Teen pregnancy poses a serious health risk for both the teen and the baby; teen pregnancy also causes social and financial problems for families. Compared to their peers who have children later, teen parents are:

- More likely to have low-birthweight babies who will suffer from poor health and development.
- More likely to have low family incomes, live in poverty, and receive public assistance.
- At increased risk of substance abuse, intimate partner violence, maternal depression, and divorce or separation.

Talk to your child about the risks of unprotected sex and make sure they know what to do in order to protect themselves from STIs and unintended pregnancy. If you are uncomfortable talking to your child about sex, ask your healthcare provider or a trusted family member or friend to help you.

Family Resources on the Web

The internet can help you find healthcare information for you and your family on adolescent health issues. Click on the links below to begin your search.

Healthy Lifestyles

My Pyramid: Steps to a Healthier You can help you learn about adolescent nutrition and ways to encourage your teen to eat healthfully: **http://www.mypyramid.gov/**

Physical Activity for Everyone includes ideas on how to get your teen interested in physical activity and fitness: **http://www.cdc.gov/nccdphp/dnpa/physical/everyone.htm**

The ***American Heart Association*** provides creative ideas for getting kids and teenagers engaged in physical fitness and healthy lifestyles: **http://www.americanheart.org/presenter.jhtml?identifier=3028650**

The ***American Cancer Society*** provides information for families on tobacco use and tobacco cessation: **http://www.cancer.org/docroot/PED/ped_10.asp**

The ***Centers for Disease Control and Prevention*** has developed a set of fact sheets on youth violence and violence prevention: **http://www.cdc.gov/ncipc/dvp/YVP/default.htm**

The ***Nemours Foundation*** provides information on eating disorders: **http://kidshealth.org/teen/food_fitness/problems/friend_eating_disorder.html** and information specifically designed for teenagers on body changes: **http://kidshealth.org/teen/your_body/**

Planned Parenthood provides information for adolescents and their parents on sexually transmitted infections: **http://www.plannedparenthood.org/sexual-health/stis-stds-101.htm**. Planned Parenthood also hosts ***TeenWire***, a website devoted to teen sexual health. This site includes information on STIs, pregnancy, sexual violence, healthy relationships, and many other issues: **http://www.teenwire.com/**

Mental Health and Substance Abuse

The ***Federation of Families for Children's Mental Health*** is a family-run organization dedicated exclusively to helping children with mental health needs and their families achieve a better quality of life: **www.ffcmh.org/**

NAMI (the National Alliance on Mental Illness) is the nation's largest grassroots mental health organization dedicated to improving the lives of persons living with serious mental illness and their families. Their website includes information on child and adolescent mental health as well as links for support groups: **www.nami.org**

The ***National Institute of Mental Health*** also provides information on child and adolescent mental health: **www.nimh.nih.gov** or **http://www.nimh.nih.gov/health/topics/child-and-adolescent-mental-health/index.shtml**.

The ***Substance Abuse and Mental Health Services Administration*** provides information on mental illness and substance abuse, treatment options, and prevention opportunities: **www.samhsa.gov**

- A Family Guide to Keeping Youth Mentally Healthy and Drug Free **http://www.family.samhsa.gov/**
- SAMHSA's National Mental Health Information Center **http://mentalhealth.samhsa.gov**

Stop Bullying Now is a website with resources on bullying: **www.stopbullyingnow.hrsa.gov/**

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BENEFICIARY EDUCATION FACT SHEET #6

Protecting Your Child: Preventing Medical Errors

This fact sheet is intended to help parents avoid medical errors, and select high-quality providers and healthcare facilities for their family.

What are Medical Errors?

Medical errors happen when something that was planned as a part of medical care doesn't work out, or when the wrong plan was used in the first place.

Medical errors can occur anywhere in the healthcare system:

- Hospitals
- Clinics
- Outpatient surgery centers
- Doctors' offices
- Nursing homes
- Pharmacies
- Patients' homes

Medical errors are one of the Nation's leading causes of death and injury. Rates of medication errors and adverse drug events for hospitalized children are comparable to rates for hospitalized adults. However, the rate of potential adverse drug events is three times higher in children, and substantially higher still for babies in neonatal intensive care units (NICUs).

Errors can involve:

- Medicines
- Surgery
- Diagnoses
- Equipment
- Lab reports

Most errors result from problems created by today's **complex healthcare** system. But errors also happen when providers and their patients have **problems communicating**. For example, a recent study found that physicians often do not do enough to help their patients make informed decisions. Uninvolved and uninformed patients are less likely to accept the physician's choice of treatment and less likely to do what they need to do to make the treatment work.

What Can You Do? Be Involved in Your Child's Health Care

The single most important way you can help to prevent errors is to be an active member of your child's healthcare team. That means taking part in every decision about your child's health care. Research shows that patients who are more involved with their care tend to get better results. Some specific tips, based on the latest scientific evidence about what works best, follow.

Medicines

Make sure that all of your child's healthcare providers know about every medicine your child is taking. This includes prescription and over-the-counter medicines, and dietary supplements such as vitamins and herbs.

- √ **At least once a year, bring all of your child's medicines and supplements with you to his/her primary care provider.** "Brown bagging" your child's medicines can help you and your provider talk about them and find out if there are any problems. It can also help your provider keep your child's records up-to-date, which can help you get better quality care.

- √ **Make sure your child's primary care provider knows about any allergies or adverse reactions your child has had to medicines.** This can help you avoid getting a medicine that can harm your child.

- √ **When any healthcare provider writes you a prescription, make sure you can read it.** If you can't read the handwriting, your pharmacist might not be able to either.

- √ **When you pick up medicine from the pharmacy, ask: Is this the medicine that my provider prescribed for my child?** A recent study found that 88% of medicine errors involved the wrong drug or the wrong dose.

- √ **Ask for information about your child's medicines in terms you can understand—both when the medicines are prescribed and when you receive them.**
  - ○ What is the medicine for?
  - ○ How am I supposed to give it to my child and for how long?
  - ○ What side effects are likely? What do I do if they occur?
  - ○ Is this medicine safe to take with other medicines or dietary supplements?
  - ○ What foods, drinks, or activities should my child avoid while taking this medicine?

- √ **If you have any questions about the directions on the medicine labels, ask.** Medicine labels can be hard to understand. For example, ask if "four doses daily" means taking a dose every 6 hours around the clock or just during regular waking hours.

- √ **Ask your pharmacist for the best device to measure liquid medicine. Also, ask questions if you're not sure how to use it.** Research shows that many people do not understand the right

way to measure liquid medicines. For example, many use household teaspoons, which often do not hold a true teaspoon of liquid. Special devices, like marked syringes, help people to measure the right dose. Being told how to use the devices helps even more.

√ **Ask for written information about the side effects your child's medicine could cause.** If you know what might happen, you will be better prepared if it does—or, if something unexpected happens instead. That way, you can report the problem right away and get help before it gets worse.

Hospital Stays

√ **If you have a choice, choose a hospital at which many patients have the procedure or surgery your child needs.** Research shows that patients tend to have better results when they are treated in hospitals that have a great deal of experience with their condition.

√ **If your child is in a hospital, consider asking all healthcare workers who have direct contact with your child whether they have washed their hands.** Hand washing is an important way to prevent the spread of infections in hospitals. Yet, it is not done regularly or thoroughly enough. A recent study found that when patients checked whether healthcare workers washed their hands, the workers washed their hands more often and used more soap.

√ **When your child is being discharged from the hospital, ask a physician or a nurse to explain the treatment plan you will use at home.** This includes learning about your child's medicines and finding out when your child can get back to his/her regular activities. Research shows that at discharge time, physicians think their patients understand more than they really do about what they should or should not do when they return home.

Surgery

√ **If your child is having surgery, make sure that you, your primary care provider, and the surgeon all agree and are clear on exactly what will be done.** Doing surgery at the wrong site (for example, operating on the left knee instead of the right) is rare. But even once is too often. The good news is that wrong-site surgery is 100% preventable. The American Academy of Orthopedic Surgeons urges its members to sign their initials directly on the site to be operated on before the surgery.

Other Steps You Can Take

√ **Speak up if you have questions or concerns.** You have a right to question anyone who is involved with your child's care.

√ **Make sure that someone, such as your child's primary care provider, is in charge of your child's care.** This is especially important if your child has many health problems, has multiple care providers, or is in a hospital.

√ **Make sure that all health professionals involved in your child's care have important health information about your child.** Do not assume that everyone knows everything they need to.

√ **Know that more is not always better.** It is a good idea to find out why a test or treatment is needed and how it can help your child. Your child could be better off without it.

√ **If your child has a test, don't assume that no news is good news.** Ask about the results.

√ **Learn about your child's condition and treatments by asking your child's care providers and by using other reliable sources.** For example, treatment recommendations based on the latest scientific evidence are available from the National Guidelines Clearinghouse™ at **http://www.guideline.gov**. Also ask your provider if your child's treatment is based on the latest medical evidence.

Choosing Quality Health Care

Here are some tips for making quality a key factor in the decisions you make about health plans, providers, treatments, and hospitals.

Look for health plans that:

- Has been given high ratings by its members on the things that are important to you.
- Has the providers and facilities (e.g., hospitals, birth centers, etc) you want or need.
- Provides the benefits (covered services) you need.
- Provides services where and when you need them.
- Has a documented history of doing a good job of preventing and treating illness.

Look for primary and specialty care providers who:

- Have received high ratings for quality of care.
- Have the training and experience to meet your family's needs.
- Will work with you to make decisions about your child's health care.

If your child becomes ill, make sure you understand:

- His/her diagnosis.
- How soon he/she needs to be treated.
- Your treatment choices, including the benefits and risks of each treatment.
- How much experience your provider has in treating your child's condition.

Look for a hospital that:

- Is accredited by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO).
- Is rated highly by the State and by consumer groups or other organizations.
- Has a lot of experience and success in treating your child's condition.
- Monitors quality of care and works to improve quality.

References

All information adapted from the Agency for Healthcare Research and Quality:

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7 Resources for Employers

Additional information employers can use to understand and improve beneficiary health:

- A benchmarking crosswalk that links recommendations of the Maternal and Child Health Plan Benefit Model to the 2007 HEDIS® measures, data from the *2006 NCQA State of Healthcare Quality Report,* and the *Healthy People 2010 Goals*.
- Web links to cost-calculators and additional resources.
- Glossary
- Index

Maternal and Child Health Benchmarking Crosswalk

Maternal and Child Health Plan Benefit Model Recommendations	HEDIS® 2007 Measures	NCQA 2006 & 2007* State of Health Care Quality % of beneficiaries in the commercially-insured population who received service (2004-2006)1	Healthy People 2010 Goals
CATEGORY: PREVENTIVE SERVICES			
Well-Child Services Medical services designed to promote and protect the health of infants, children, and adolescents. These services include comprehensive health assessments; age appropriate screening, counseling, preventive medication, and preventive treatment; parent and child education; and anticipatory guidance.	• Well-child visits in the first 15 months of life • Well-child visits in the third, fourth, fifth and sixth years of life • Adolescent well-care visit	• Well-child visit (15 months) 6 or more visits: 72.9%* • Well-child visit (3, 4, 5, and 6 years of age): 66.7%* • Well-child care (adolescent): 40.3%*	**Lead, 1994:** 4.4% of children aged 1 to 5 years have blood lead levels exceeding 10 mg/dL **Lead, 2010 target:** reduce proportion to 0% **Hearing, 2001:** 66% of newborns receive screenings for hearing loss before age 1 month, 56% receive audiologic evaluation before age 3 month, and 57% are enrolled in appropriate intervention services by age 6 months **Hearing, 2010 target:** increase the proportion of newborns who are screened for hearing loss by age 1 month to 90%, have audiologic evaluation by age 3 months to 70%, and are enrolled in appropriate intervention services by age 6 months to 85% **Tobacco use, 2002:** 26% of adolescents in 12th grade smoke **Tobacco use, 2010 target:** reduce smoking rate to 16%

Maternal and Child Health Plan Benefit Model Recommendations	HEDIS® 2007 Measures	NCQA 2006 & 2007* State of Health Care Quality % of beneficiaries in the commercially-insured population who received service (2004-2006)1	Healthy People 2010 Goals
CATEGORY: PREVENTIVE SERVICES			
Immunizations Screening for susceptibility to vaccine preventable diseases, immunizations, and related services.	• Childhood immunization status • Adolescent immunization status	• Child immunizations (combination 2): 77.7% • Childhood immunization for chickenpox (VZV): 89.9% • Adolescent immunizations status (combination 2): 53.7% • Adolescent immunization for chickenpox (VZV): 60.2%	**Infant hepatitis B, 1998:** 87% of children aged 19 to 35 months received 3 doses **Infant hepatitis B, 2010:** increase the proportion to 90% **Hepatitis B, 1995:** 1,682 chronic hepatitis B virus infections in children under age 2 years were reported **Hepatitis B, 2010 target:** reduce chronic hepatitis B virus infections in infants and young children (perinatal infections) to 400 infections **Child immunization series, 1998:** 73% of children aged 0 to 12 years received all vaccines that had been recommended for universal administration for at least 5 years (DTaP, polio, MMR, Hib and HepB vaccines) **Child immunization series, 2010 target:** increase the proportion to 90% **Adolescent immunization series, 1997:** 48% of adolescents aged 13 to 15 years received 3 or more doses of hepatitis B vaccine, 89% received 2 or more doses of MMR, 93% received 1 or more tetanus –diphtheria booster, and 45% received 1 or more doses of varicella (for chickenpox) **Adolescent immunization series 2010 target:** increase the proportions for all vaccines to 90%
Preventive Dental Services Regular risk assessments and anticipatory guidance in order to promote oral health; regular oral examinations and diagnostic procedures.	• Annual dental visits		**Oral health, 1994:** 28% of children aged 8 years and 15% of adolescents aged 14 years received dental sealants on their molar teeth **Oral health, 2010 target:** increase the proportion to 50% for both groups

Maternal and Child Health Plan Benefit Model Recommendations	HEDIS® 2007 Measures	NCQA 2006 & 2007* State of Health Care Quality % of beneficiaries in the commercially-insured population who received service (2004-2006)1	Healthy People 2010 Goals
CATEGORY: PREVENTIVE SERVICES			
Early Intervention Services for Mental Health / Substance Abuse Medical services designed to educate and counsel individuals and families about behaviors that facilitate mental health; improve personal resiliency; facilitate early intervention and prevent the escalation of sub-clinical problems; and monitor and treat V-code conditions.			**Mental health, 2001:** 59% of children with mental health problems received treatment **Mental health, 2010 target:** increase the proportion of children with mental health problems who receive treatment to 66% **Alcohol use, 2002:** 51% of individuals age 12 and above consume alcohol; 17.6% of adolescents aged 12 to 17 consume alcohol **Alcohol misuse, 2002:** 10.7% of adolescents aged 12 to 17 binge drink (five or more drinks on the same occasion within the past 30 days) **Alcohol misuse, 2010 target:** reduce adolescents engaging in binge drinking during the past month to 3.1% **Alcohol misuse (adults), 1998:** 24.3% of adults aged 18 and older binge drink **Alcohol misuse (adults), 2010 target:** reduce proportion to 13.4%
Preventive Vision Services Medical services designed to identify children who may have eye or vision abnormalities or risk factors for developing eye problems.			**Vision, 2002:** 36% of children aged 5 years and under had ever had their vision screened in 2002 **Vision, 2010 target:** increase the proportion to 52%
Preventive Audiology Screening Services Medical services to detect and diagnose speech, hearing, and language disorders.			**Hearing, 2001:** 66% of newborns receive screenings for hearing loss before age 1 month, 56% receive audiologic evaluation before age 3 months, and 57% are enrolled in appropriate intervention services by age 6 months **Hearing, 2010 target:** increase the proportion of newborns who are screened for hearing loss by age 1 month to 90%, have audiologic evaluation by age 3 months to 70%, and are enrolled in appropriate intervention services by age 6 months to 85%

Maternal and Child Health Plan Benefit Model Recommendations	HEDIS® 2007 Measures	NCQA 2006 & 2007* State of Health Care Quality % of beneficiaries in the commercially-insured population who received service (2004-2006)[1]	Healthy People 2010 Goals
CATEGORY: PREVENTIVE SERVICES			
Unintended Pregnancy Prevention Services Medical services designed to facilitate the prevention of unintended pregnancies and promote healthy approaches to family planning.			**Unintended pregnancies, 1995:** 51% of pregnancies in the U.S. are intended **Unintended pregnancies 2010 target:** increase rate to 70% **Condom use, 1999:** 85% of adolescents abstained from intercourse or used condoms if sexually active **Condom use, 2010 target:** increase the proportion to 95% **Contraceptive use, 1995:** 93% of females aged 15 to 44 years who are at risk of unintended pregnancy use contraception **Contraceptive use, 2010 target:** increase rate to 100%
Preventive Preconception Care Medical services aimed at improving the health outcomes of pregnant women and their infants by promoting the health of women of reproductive age *before* conception.			**Alcohol misuse, 1997:** fetal alcohol syndrome occurs in 0.4 per 1,000 live births **Alcohol misuse, 2010 target:** reduce incidence to 0.1 cases per 1,000 live births **Developmental delays and disabilities, 1994:** 131 per 10,000 children born suffers from mental retardation and 32.2 per 10,000 suffer from cerebral palsy **Developmental delays and disabilities, 2010 target:** reduce rate of mental retardation to 124 cases per 10,000 live births and reduce the rate of cerebral palsy to 31.5 cases per 10,000 live births **Folic acid, 1994:** 21% of non-pregnant women aged 15 to 44 years consume at least 400 mcg of folic acid per day **Folic acid, 2010 target:** increase rate to 80% **Neural tube defects, 1996:** 6 cases of spina bifida or other NTD per 10,000 live births **Neural tube defects, 2010 target:** reduce the number of spina bifida cases to 3 per 10,000 live births

Maternal and Child Health Plan Benefit Model Recommendations	HEDIS® 2007 Measures	NCQA 2006 & 2007* State of Health Care Quality % of beneficiaries in the commercially-insured population who received service (2004-2006)1	Healthy People 2010 Goals
CATEGORY: PREVENTIVE SERVICES			
Preventive Prenatal Care Medical services designed to facilitate the health of a pregnant woman and fetus, or that have become necessary as a result of a woman being pregnant.	• Timeliness of prenatal care • Frequency of ongoing prenatal care	• Timeliness of prenatal care: 91.8% • Frequency of ongoing prenatal care:* 0 visits: 1.9% 1 visit: 1.2% 2 visits: 1.5% 3 visits: 2.7% 4 visits: 5.5% 5 visits: 14.3% 6 or more visits: 72.9%	**Prenatal care, 2004:** 84% of pregnant women received timely prenatal care **Prenatal care, 2010 target:** increase rate to 90% **Sexually transmitted infections (STIs), 2010 target:** increase the proportion of pregnant females screened for STIs (including HIV infection and bacterial vaginosis) during prenatal healthcare visits **Tobacco and substance use, 2002:** 11% of pregnant women smoke, 1997: 14% of pregnant women drink alcohol, 1% binge drink, and 2% use illicit drugs **Tobacco and substance use 2010 target:** reduce smoking rate to 1%, alcohol use rate to 6%, binge drinking rate to 0%, and illicit drug use rate to 0%
Preventive Postpartum Care Medical services that are necessary for the health of the woman post-pregnancy and/or the newborn infant.	• Timeliness of postpartum care	• Timeliness of postpartum care: 81.5%	**Breastfeeding, 2002:** 43% of mothers breastfeed exclusively for 3 months **Breastfeeding, 2010 target:** increase the proportion to 60% **Breastfeeding, 2002:** 13% of mothers breastfeed exclusively for 6 months **Breastfeeding, 2010 target:** increase the proportion to 25%

Maternal and Child Health Plan Benefit Model Recommendations	HEDIS® 2007 Measures	NCQA 2006 & 2007* State of Health Care Quality % of beneficiaries in the commercially-insured population who received service (2004-2006)1	Healthy People 2010 Goals
CATEGORY: PREVENTIVE SERVICES			
Preventive Services (General) Medical services that are designed to detect the existence of, or risk for, diseases, conditions, and problems.	• Cervical cancer Screening • Medical assistance with smoking cessation • Chlamydia screening in women	• Cervical cancer screening: 81.8% *Tobacco use:* • Advising smokers to quit: 71.2% • Discussing cessation medications: 39.4% • Discussing quitting strategies: 39.0% *Sexually transmitted infections (STIs):* • Chlamydia screening: 16 to 20 years: 34.4% 21 to 25 years: 35.2%	**Cervical Cancer, 2010 target:** increase the proportion of women who receive a Pap test to 97%. **Tobacco use, 1999:** 20% of adult females and 25% of adult males smoke **Tobacco use, 2010 target:** reduce adult smoking rate to 12% **Obesity (children), 1994:** 11% of children between 6 to 19 years are overweight or obese **Obesity (children), 2010 target:** reduce proportion to 5% **Motor vehicle injuries, 2002:** 8.4 per 100,000 deaths result form a motor vehicle crash (age-adjusted deaths) **Motor vehicle injuries, 2010 target:** reduce rate to 8.0 deaths per 100,000 ***Sexually transmitted infections (STIs)*** **Chlamydia, 2002:** 25% of sexually active women aged 25 and under enrolled in commercial managed care organizations are screened for Chlamydia infection **Chlamydia, 2010 target:** increase the proportion to 62% **Genital herpes, 1994:** 17% of adults aged 20 to 29 years have a genital herpes infection **Genital herpes, 2010 target:** reduce proportion to 14% **Gonorrhea, 2002:** there are 279 new cases of gonorrhea among women aged 15 to 44 years per 100,000 population **Gonorrhea, 2010 target:** reduce the incidence to 42 new cases per 100,000 population

Maternal and Child Health Plan Benefit Model Recommendations	HEDIS® 2007 Measures	NCQA 2006 & 2007* State of Health Care Quality % of beneficiaries in the commercially-insured population who received service (2004-2006)1	Healthy People 2010 Goals
CATEGORY: PHYSICIAN/PRACTITIONER SERVICES			
Services Delivered by a Primary Care Provider Medical services delivered in the primary care setting that are diagnostic, therapeutic, rehabilitative, or palliative in nature.	• Appropriate treatment for children with upper respiratory infection • Appropriate testing for children with pharyngitis • Board certification	• Appropriate treatment for children with upper respiratory infection: 82.9% • Appropriate childhood testing for pharyngitis: 69.7% • Board Certification*: OB/GYN: 80.1% Primary Care Provider: 82.8% Pediatrician: 74.1%	**Medical home, 2001:** 53% of children with special health care needs received care in a medical home **Medical Home, 2010 target:** increase the proportion to 100% **Primary Care, 1996:** 77 % of the population had a usual primary care provider **Primary Care, 2010 target:** increase percentage of population with a usual primary care provider to 85%
Services Delivered by a Mental Health/Substance Abuse Provider Medical services delivered by or under the direction of a mental health professional or primary care provider.	• Antidepressant medication management to continue treatment	• Initiation of drug dependence treatment: 44.5%; Engagement of drug dependence treatment: 14.1% • Continuation of antidepressant treatment: 45.0%	**Mental health, 2001:** 59% of children with mental health problems received treatment **Mental health, 2010 target:** increase the proportion who receive treatment to 66% **Co-occurring disorders, 2002:** 51% of persons with co-occurring substance abuse and mental disorders received treatment for both disorders **Co-occurring disorders, 2010 target:** increase the proportion of persons with co-occurring substance abuse and mental disorders who receive treatment for both disorders to 57%
Services Delivered by a Specialty Provider or Surgeon Medical services delivered by a specialty physician or surgeon that are diagnostic, therapeutic, rehabilitative, or palliative in nature.	• Board certification	• *Board Certification:** OB/GYN: 80.1% Primary Care Provider: 82.8% Pediatrician: 74.1%	
E-visits and Telephonic Visits Two-way electronic communication (via telephone or email) between a beneficiary and a provider that takes the place of an office visit.			

Maternal and Child Health Plan Benefit Model Recommendations	HEDIS® 2007 Measures	NCQA 2006 & 2007* State of Health Care Quality % of beneficiaries in the commercially-insured population who received service (2004-2006)1	Healthy People 2010 Goals
CATEGORY: EMERGENCY CARE, HOSPITALIZATION, AND OTHER FACILITY-BASED CARE			
Emergency Room Services Services provided to an individual who is experiencing a sudden or unexpected condition that may endanger the life of the individual or could result in a serious injury or disability and thus requires immediate medical attention. **Urgent Care Services** Ambulatory care services delivered to an individual who is experiencing a medical condition that is serious or acute and requires medical attention within 24 hours, yet does not pose an immediate threat to life or health.	• Use of appropriate medications for people with asthma	• Persons with persistent asthma (one or more ER visit) prescribed medications: 89.9%	**Asthma, 1997:** 150 per 10,000 children under 5 years and 71.1 per 10,000 persons aged 5 to 64 visited a hospital ER for asthma **Asthma, 2010 target:** reduce hospital ER visits for asthma to 80 for under 5 years and 50 for persons aged 5 to 64 per 10,000
Inpatient Substance Abuse Detoxification Medical services designed to facilitate the medical process of detoxification.	• Initiation and engagement of alcohol and other drug dependence • Chemical dependency utilization – inpatient discharges and average length of stay	• Initiation of drug dependence treatment: 44.5% • Engagement of drug dependence treatment: 14.1% • Chemical dependency utilization.* Inpatient discharges: 1.4 per 1,000, average length of stay: 5.2 days	**Substance abuse, 2002:** 78% of adolescents reported not using alcohol or any illicit drugs during the past 30 days **Substance abuse, 2010 target:** increase the proportion to 91% **Substance abuse treatment, 2002:** 18% received illicit drug treatment and 10% received alcohol treatment **Substance abuse treatment, 2010 target:** increase the proportion of persons who need alcohol and/or illicit drug treatment and received specialty treatment for abuse or dependence in the past year

Maternal and Child Health Plan Benefit Model Recommendations	HEDIS® 2007 Measures	NCQA 2006 & 2007* State of Health Care Quality % of beneficiaries in the commercially-insured population who received service (2004-2006)1	Healthy People 2010 Goals
CATEGORY: EMERGENCY CARE, HOSPITALIZATION, AND OTHER FACILITY-BASED CARE			
Inpatient Hospital Service: General Inpatient/Residential Care (Including Mental Health / Substance Abuse) Medical services that are diagnostic, therapeutic, rehabilitative, or palliative in nature and are furnished in a facility such as a hospital or appropriately accredited residential treatment facility.	• Antidepressant medication management to continue treatment • Initiation and engagement of alcohol and other drug dependence • Inpatient utilization – general hospital/acute care • Mental health utilization – inpatient discharges and average length of stay • Mental health utilization – percentage of members receiving inpatient and intermediate care and ambulatory services	• Continuation of antidepressant treatment: 45.0% • Initiation of drug dependence treatment: 44.5% • Engagement of drug dependence treatment: 14.1% • Inpatient utilization – general hospital/acute care.* Average length of stay: 3.6 days, total inpatient discharges per 1,000: 56.7 • Mental health utilization – percentage of members receiving inpatient and intermediate care and ambulatory services:* 5.7%	**Depression, 1997:** 23% of Adults aged 18 years and older with depression receive treatment **Depression, 2010 target:** increase the proportion to 50% **Mental health, 2001:** 59% of children with mental health problems received treatment **Mental health, 2010 target:** increase the proportion to 66% **Substance abuse, 2002:** 78% of adolescents reported not using alcohol or any illicit drugs during the past 30 days **Substance abuse, 2010 target:** increase the proportion to 91%. **Substance abuse treatment, 2002:** 18% received illicit drug treatment and 10% received alcohol treatment **Substance abuse treatment, 2010 target:** increase the proportion of persons who need alcohol and/or illicit drug treatment and received specialty treatment for abuse or dependence in the past year
Inpatient Hospital Service or Birth Center Facilities: Labor / Delivery Medical services specifically designed to facilitate labor and delivery.	• Births and average length of stay, newborns • Discharge and average length of stay – maternity care	• Maternity care.* Average length of stay: C-section: 3.6 days, vaginal delivery: 2.2, total deliveries: 2.7 • Newborns.* Average length of stay: well newborns: 2.2 days, complex newborns: 16.5, total newborns: 3.3	**Cesarean births, 1998:** 18% of women giving birth for the first time and 72% of women with prior cesarean births had a cesarean birth **Cesarean births, 2010 target:** reduce cesarean births among low-risk women to 15% for first birth; 63% for prior cesarean births **Genetic and endocrine conditions, 2010 target:** ensure that all newborns are screened at birth for conditions mandated by their State-sponsored newborn screening programs
Ambulatory Surgical Facility or Outpatient Hospital Services Medical services that are preventive, diagnostic, therapeutic, or rehabilitative in nature and are delivered in an ambulatory surgical or an outpatient hospital facility.			

Maternal and Child Health Plan Benefit Model Recommendations	HEDIS® 2007 Measures	NCQA 2006 & 2007* State of Health Care Quality % of beneficiaries in the commercially-insured population who received service (2004-2006)1	Healthy People 2010 Goals
CATEGORY: EMERGENCY CARE, HOSPITALIZATION, AND OTHER FACILITY-BASED CARE			
Mental Health / Substance Abuse Partial-Day Hospitalization (or Day Treatment) Services Mental health / substance abuse services.	• Antidepressant medication management to continue treatment • Initiation and engagement of alcohol and other drug dependence • Mental health utilization – Percentage of members receiving inpatient and intermediate care and ambulatory services	• Continuation of antidepressant treatment: 45.0% • Initiation of drug dependence treatment: 44.5% • Engagement of drug dependence treatment: 14.1% • Mental health utilization – Percentage of members receiving:* inpatient care: .28% intermediate care: .05% ambulatory services: 5.72%	**Mental health, 2001:** 59% of children with mental health problems received treatment **Mental health, 2010 target:** increase the proportion to 66% **Substance abuse, 2002:** 78% of adolescents reported not using alcohol or any illicit drugs during the past 30 days **Substance abuse, 2010 target:** increase the proportion to 91% **Substance abuse treatment, 2002:** 18% received illicit drug treatment and 10% received alcohol treatment **Substance abuse treatment, 2010 target:** increase the proportion of persons who need alcohol and/or illicit drug treatment and received specialty treatment for abuse or dependence in the past year
Prescription Drugs Medications used to prevent, treat, or manage any medical condition.	• Antidepressant medication management to continue treatment • Antibiotic utilization • Use of appropriate medications for people with asthma	• Continuation of antidepressant treatment: 45.0% • Persons with persistent asthma (one or more ER visit) prescribed medications: 89.9%	**Mental health, 2001:** 59% of children with mental health problems received treatment **Mental health, 2010 target:** increase the proportion to 66%

Maternal and Child Health Plan Benefit Model Recommendations	HEDIS® 2007 Measures	NCQA 2006 & 2007* State of Health Care Quality % of beneficiaries in the commercially-insured population who received service (2004-2006)1	Healthy People 2010 Goals
CATEGORY: THERAPEUTIC SERVICES/ANCILLARY SERVICES			
Dental Services Medical services specifically designed to address oral health.			**Dental caries, 1994:** 52% of children have experienced dental caries in their primary and permanent teeth **Dental caries, 2010 target:** reduce proportion to 42%
Vision Services Refractive exams for eyeglasses, contacts, or other low vision aids, and vision therapy.			**Vision screening, 2002:** 36% of children aged 5 years and under had ever had their vision screened **Vision screening, 2010 target:** increase the proportion to 52% of preschool children **Blindness, 1997:** 24 per 1,000 children and adolescents aged 17 years and under were blind or visually impaired **Blindness, 2010 target:** reduce proportion to 18 per 1,000
Audiology Services Medical services specifically designed to address hearing loss.			**Deafness, 2001:** adults aged 20 to 69 years with hearing loss who have ever used a hearing aid, 149.6 per 1,000; persons who are deaf or very hard of hearing and who have new cochlear implants, 51 per 1,000 **Deafness, 2010 target:** increase the proportion of persons with hearing impairments who have ever used a hearing aid or assistive listening devices to 155.0 per 1,000 or who have cochlear implants to 56 per 1,000
Nutritional Services Medical services specifically designed to address beneficiary diet and nutrition.			**Healthy diet, 1996:** 28% of persons aged 2 years and older consumed at least two daily servings of fruit, 3% consumed three daily services of vegetables, and 7% consumed six daily servings of grains **Healthy diet, 2010 target:** increase the proportion of fruits to 75%, vegetables to 50%, and grains to 50%

Maternal and Child Health Plan Benefit Model Recommendations	HEDIS® 2007 Measures	NCQA 2006 & 2007* State of Health Care Quality % of beneficiaries in the commercially-insured population who received service (2004-2006)1	Healthy People 2010 Goals
CATEGORY: THERAPEUTIC SERVICES/ANCILLARY SERVICES			
Occupational, Physical, and Speech Therapy Services Medical services designed to assist people regain or develop performance skills; medical services designed to relieve symptoms, improve function, and prevent further disability for individuals disabled by chronic or acute disease or injury; medical services for beneficiaries with speech, hearing, or language problems.			**Disabilities, 1996:** 45% of children and youth aged 6 to 21 years with disabilities spent at least 80% of their time in regular education programs **Disabilities, 2010 goal:** increase the proportion of children and youth with disabilities who spend at least 80% of their time in regular education programs to 60%
Infertility Services Medical services designed to diagnose and address infertility.			**Infertility, 1995:** 13% of married couples with wives aged 15 to 44 years had impaired ability to conceive or maintain a pregnancy **Infertility, 2010 target:** reduce the proportion to 10%
Home Health Services Medical services that are provided to a beneficiary at his/her place of residence upon physician order as part of a written plan of care.			
Hospice Care Medical and social services designed to support and care for persons in the last phase of an incurable disease so that they may live as fully and comfortably as possible.			**Hospice, 2010 target:** reduce the proportion of adults with long-term care needs who do not have access to the continuum of long-term care services
Durable Medical Equipment, Supplies, Medical Food Necessary medical products suitable for use in the home; foods used to prevent, treat, or manage a medical condition.			**Equipment, 2002:** 17% of people with disabilities reported not having the assistive devices and technology needed **Equipment, 2010 target:** reduce the proportion to 7%
Transportation Services Transport services to or from the nearest hospital equipped to adequately treat a beneficiary's condition.			

Maternal and Child Health Plan Benefit Model Recommendations	HEDIS® 2007 Measures	NCQA 2006 & 2007* State of Health Care Quality % of beneficiaries in the commercially-insured population who received service (2004-2006)1	Healthy People 2010 Goals
CATEGORY: LABORATORY DIAGNOSTIC, ASSESSMENT, AND TESTING SERVICES			
Laboratory Services Medical services designed to confirm or deny the existence or severity of a particular disease or condition.			
Diagnostic, Assessment, and Testing (Medical and Psychological) Services Medical services designed to confirm or deny the existence or severity of a particular disease or condition.			

Notes: The NCQA Report on the State of Health Care Quality is based on 500 health plans that voluntarily report HEDIS measurements to NCQA.
* Available in the 2007 NCQA *State of Health Care Quality Report.* Available at: http://web.ncqa.org/

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All information from NCQA was adapted from:

National Committee for Quality Assurance. *The State of Health Care Quality: Industry Trends and Analysis, 2007.* Washington, DC: National Committee for Quality Assurance; 2007.

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National Committee for Quality Assurance. *HEDIS 2007 Summary Table of Measures and Product Lines. Measure List.* Washington, DC: National Committee for Quality Assurance; 2006. Available at: http://www.ncqa.org/Programs/HEDIS/2007/MeasuresList.pdf. Accessed August 15, 2007.

All information related to the *Healthy People 2010* guidelines was adapted from:

U.S. Department of Health and Human Services. *Healthy People 2010,* 2nd ed. *With Understanding and Improving Health and Objectives for Improving Health.* 2 vols. Washington. DC: U.S. Government Printing Office; November 2000.

U.S. Department of Health and Human Services. *Healthy People 2010.* Midcourse Review. Washington, DC: U.S. Department of Health and Human Services. Office of Disease Prevention and Health Promotion. Available at: http://www.healthypeople.gov/data/midcourse/comments/objectives.asp. Accessed August 15, 2007.

Links to Cost-Calculators and Additional Resources

Cost-Calculators

Alcohol Misuse (General)

- George Washington University Alcohol Treatment ROI Calculator, **http://www.alcoholcostcalculator.org/roi/**

Underage Drinking (Adolescent Alcohol Misuse)

http://www.alcoholcostcalculator.org/kids/

Diabetes (General)

- Diabetes at Work, Conducting a Diabetes Assessment. General Assessment Tool, **http://www.diabetesatwork.org/GettingStarted/AssessmentTool.cfm**

Obesity and Physical Activity (General)

- CDC LEAN *Works!* Obesity Cost Calculator, **http://www.cdc.gov/leanworks/costcalculator/index.html**

Tobacco Use (General)

- America's Health Insurance Plans (AHIP) and Center for Health Research, Kaiser Permanente Tobacco ROI calculator, **http://www.businesscaseroi.org/roi/default.aspx**
- Free & Clear Tobacco Cost Exposure Calculator, **http://www.freeclear.com/quit-for-life/calculator.aspx**

Data Sources

Data Resource Center, National Survey of Children with Special Health Care Needs, www.cshcndata.org

Additional Resources

U.S. Department of Health and Human Services (Federal)

- Advisory Committee on Immunization Practices (ACIP), **http://www.cdc.gov/vaccines/recs/acip/default.htm**
  - Immunization Schedules (pediatric): **http://www.cdc.gov/vaccines/recs/schedules/default.htm#child**
  - Immunization Schedules (adult): **http://www.cdc.gov/vaccines/recs/schedules/default.htm#adult**
- Agency for Healthcare Research and Quality (AHRQ), **http://www.ahrq.gov**
- Centers for Disease Control and Prevention (CDC), **http://www.cdc.gov**
- Healthy People 2010 Goals, **http://www.healthypeople.gov/**
- National Guidelines Clearinghouse, **http://www.guideline.gov/**

- National Healthcare Quality Report (AHRQ), **http://www.innovations.ahrq.gov/qualitytools/**
- National Institutes of Health (NIH), **http://www.nih.gov**
- The National Women's Health Information Center, **http://www.4women.gov/pregnancy/**
- U.S. Department of Health and Human Services (USDHHS), **http://www.dhhs.gov/**
- U.S. Preventive Services Task Force (USPSTF), **http://www.ahrq.gov/clinic/prevenix.htm**
- U.S. Public Health Service (USPHS), **http://www.usphs.gov**
- U.S. Surgeon General, **http://www.surgeongeneral.gov/**

Professional Organizations

- American Academy of Family Physicians (AAFP), **http://www.aafp.org**
- American Academy of Pediatrics (AAP), **http://www.aap.org**
- American College of Obstetricians and Gynecologists (ACOG), **http://www.acog.org**
- American Congress of Occupational and Environmental Medicine (ACOEM), **http://www.acoem.org/**
- American College of Preventive Medicine (ACPM), **http://www.acpm.org/**
- American Medical Association (AMA), **http://www.ama-assn.org**
- American Speech-Language-Hearing Association (ASHA), **http://www.asha.org**

Other

- Institute of Medicine (IOM), **http://www.iom.edu**
- National Committee on Quality Assurance (NCQA), **http://www.ncqa.org**
- HEDIS Data Set, National Committee on Quality Assurance (NCQA), **http://www.ncqa.org/tabid/78/Default.aspx**

Condition/Disease Specific Resources (Federal)

- National Center for Injury Prevention, **http://www.cdc.gov/injury/index.html**
- National Institute on Alcohol Abuse and Alcoholism (NIAAA), **http://www.niaaa.nih.gov/**
- National Institute of Child Health and Human Development, **http://www.nichd.nih.gov/**
- National Institute on Deafness and Other Communication Disorders, **http://www.nidcd.nih.gov/**

Condition/Disease Specific Resources (Non-Federal)

- American Cancer Society (ACS), **http://www.cancer.org**
- American Dental Association (ADA), **http://www.ada.org**
- American Diabetes Association (ADA), **http://www.diabetes.org**
- American Dietetics Association (ADA), **http://www.eatright.org**
- American Heart Association (AHA), **http://www.americanheart.org**
- American Managed Behavioral Healthcare Association (AMBHA), **http://www.ambha.org**
- March of Dimes, **http://www.marchofdimes.com**
- National Mental Health Association (NHMA), **http://www.nmha.org**

Supplemental Guides and Resources

- Agency for Healthcare Research and Quality, Guide to Clinical Preventive Services, 2009 Services 2010-2011, **http://www.ahrq.gov/clinic/pocketgd.htm**
- Agency for Healthcare Research and Quality, 2005 National Healthcare Disparities Report, **http://www.ahrq.gov/qual/nhdr06/nhdr06.htm**
- Centers for Disease Control and Prevention, The CDC Guide to Breastfeeding Interventions, **http://www.cdc.gov/breastfeeding/resources/guide.htm**
- Centers for Disease Control and Prevention, The Community Guide to Preventive Services, **http://www.thecommunityguide.org/**
- Centers for Disease Control and Prevention, Pregnancy and Reproductive Health: Guidelines and Recommendations, **http://www.cdc.gov/women/gderecom/reprhlth.htm**

National Business Group on Health Resources

Benefit Design

- Consumer Driven Healthcare for Children: An Employer's Guide to Developing Child and Adolescent Benefits, **http://www.businessgrouphealth.org/benefitstopics/et_childbenefits.cfm**
- The Purchaser's Guide to Clinical Preventive Services: Moving Science into Coverage, **http://www.businessgrouphealth.org/preventive/**
- An Employer's Guide to Behavioral Health Services: A Roadmap and Recommendations for Evaluating, Designing, and Implementing Behavioral Health Services, **www.businessgrouphealth.org/pdfs/fullreport_behavioralHealthservices.pdf**
- Engaging Large Employers Regarding Evidence-Based Behavioral Health Treatment, **http://www.businessgrouphealth.org/benefitstopics/et_mentalhealth.cfm**

Maternal and Child Health: Additional Resources

- Autism: Facts for Employers, **http://www.businessgrouphealth.org/pdfs/NBGH%20CFP%20Autism%20FS_Final.pdf**
- Preventing, Identifying and Treating Maternal Depression: Tools for Employers, **http://www.businessgrouphealth.org/pdfs/mat_depression.pdf**
- An Employer's Guide to Child and Adolescent Mental Health: Recommendations for the workplace, health plan, and Employee Assistance Programs, **http://www.businessgrouphealth.org/pdfs/CAMH_Guide_LoRes.pdf.**

Communication Tools

www.businessgrouphealth.org/usinginformation/Default.aspx

- **If You're a Health Care Consumer, Speak Up**
- **Using Antibiotics Safely**
- **Medication Safety: 10 Recommendations For Your Protection**
- **Think It Through: Weighing the Risks and Benefits of New Medications**
- **Caring for Children with Ear Infections**

Glossary

5 C's of enrollment include cost, coverage information, changes to plans, comparisons to last year's plans and options, and current options.

Absenteeism: Missing days from work. Absenteeism can be caused by any type of health problem and can be counted as general sick leave, workers' compensation, short-term disability, long-term disability, family medical leave, paid time off (PTO), or unpaid leave. Premature mortality also results in absenteeism.

Actuarial analysis: A forecast developed by specialized actuarial methods, giving the probability of future events for a given population, such as healthcare costs.

Allowed Charges: The amount of the bill either the insurance company or the patient will be responsible for based on whether the health care provider is a participating or non-participating physician.

Annual/lifetime caps: A cap on the benefits paid during the duration of a health insurance/coverage policy.

Antenatal: A synonym for prenatal; occurring during pregnancy.

Anticipatory guidance: Information and counseling to help families understand key developmental goals for children and adolescents, such as success in school and safety.

At-work productivity decline (also see presenteeism): Reduced normal activity and job output due to a health problem.

Audience-centered perspective: Communication that reflects the lives and values of the targeted group.

Balanced Scorecard Methodology: A concept for organizing and measuring a company's key activities in relation to its vision and strategies, to give managers a comprehensive view of leading and lagging performance indicators associated with a business.

Benchmarking: Baseline comparison exercises employers engage in order to assess their relative position in the marketplace.

Birth cohort: A group of people born during a particular period or year.

Carried to term/ full term birth: A gestation period equal to, or more than, 38 weeks.

Case management is the arrangement, coordination, and monitoring of healthcare services to meet the needs of a particular patient and his/her family.

Cesarean section (c-section): A major abdominal surgery in which a surgeon cuts through a woman's abdomen and uterus allowing a baby to be delivered.

Childbearing age: A woman aged 18 to 44 years.

Childcare breakdowns occur when parents must provide care for their child unexpectedly. This can result from child illness or injury, school closures, daycare closures, or other causes.

Children with special healthcare needs are those who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that usually required by children of the same age. Children who are victims of abuse or trauma and children in foster care also qualify as "children with special needs" due to their demonstrated risk for physical, emotional, and behavioral problems.

Chronic illness (specific to childhood): A health condition that is expected to last 3 months or longer and involves one or more of the following: limitation of age-appropriate functions, disfigurement, dependency on medical technology, medication, special diet, more medical care than is usual for the child's age, or special ongoing treatments.[1] Managing a child's chronic illness typically requires a routine medical treatment regimen (e.g., maintenance drugs) and crisis care (e.g., periodic hospitalization) .

Coinsurance: A form of medical cost-sharing in a

health plan that requires a covered person to pay a stated percentage (e.g., 10%) of medical expenses.

Congenital: A problem that existed at the time of birth or developed *in utero* (before birth).

Copayments: A form of medical cost-sharing in a health plan that requires a covered person to pay a fixed dollar amount when a medical service is received.

Cost, total: The sum of all direct and indirect costs.

Cost, direct: Fixed and variables costs directly associated with a medical condition or healthcare intervention.

Cost, indirect are costs separate from medical care that result from a medical problem. Indirect costs include costs related to absenteeism, lost productivity, and long-term disability.

Cost-benefit analysis: An analysis tool that measures the results or benefits of a decision compared with the required costs.

Cost-effective: A determination that the net cost per unit of health generated by an intervention is favorable in comparison with other health services.

Cost-offset: A cost-offset occurs when the use of one type of healthcare service (e.g., a preventive service) either averts or reduces the cost that would occur from use of another healthcare service (e.g., treatment service). For example, investing in preventive dental services has been proven to reduce the need and costs of restorative care.

Cost-saving: The reduction in healthcare expenses resulting from an intervention or program after accounting for the cost required to develop, implement, and maintain the given intervention or program.

Cost-sharing: Allocation of some of the health plan benefit costs to plan participants. Cost-sharing strategies commonly include premiums, deductibles, coinsurance or copayment, and annual of lifetime benefit maximums. *The National Business Group on Health's Plan Benefit Model does not recommend the use of deductibles or lifetime limits/caps.*

Critical success factors represent primary descriptive references about the organization's goals. Each critical success factor can be quantified into a subjective or objective metric know as a key performance indicator.

Cultural competence is a set of policies, attitudes, beliefs, and behaviors that enable healthcare purchasers, health plans, and providers to work effectively with other races, ethnic groups, and cultures.

Deductible: A fixed dollar amount during the benefit period - usually a year - that a covered person pays before the insurer/employer starts to make payments for covered medical services. Plans may have both per individual and per family deductibles. *The National Business Group on Health's Plan Benefit Model does not recommend the use of deductibles.*

Dependent: A person that is coved under an insurance plan because they meet the necessary requirements of relation to the employee such as being a spouse or child.

Dietary supplements are products taken orally that contain one or more ingredients that are intended to supplement one's diet and are not considered food.

Direct medical expense: The economic value directly attributable to a particular clinical action, purchase, program or initiative; the amount spent for diagnosis, treatment or prevention of medical problems. Direct medical expenses include visits to physician's offices and treatment expenditures.

Disincentive: A negative motivational influence.

Domains represent descriptive terms used in the Balanced Scorecard for categorizing similar critical success factors and support a specific Perspective.

Doula: A woman experienced in childbirth who provides advice, information, emotional support, and physical comfort to a pregnant woman before, during, and immediately after childbirth.

Early exit from the workforce refers to the situation when a working parent is forced to quit

his/her job in order to provide full-time care to a sick, injured, or disabled child.

Elective cesarean section: The surgical delivery of a baby in response to patient or provider choice, not medical necessity.

Emergency room/ department: A hospital room or area staffed and equipped for the reception and treatment of persons with conditions (as illness or trauma) requiring immediate medical care.

Employee assistance program: An employer-sponsored service designed to assist employees, spouses, and dependent children in finding help for emotional, drug/alcohol, family, and other personal or job-related problems.

Epidural: Anesthesia produced by injection of a local anesthetic into the peridural space of the spinal cord beneath the ligamentum flavum — called also *peridural anesthesia.*

Evidence-based medicine: The conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence-based medicine integrates individual clinical expertise with the best available external clinical evidence from systematic research.[2] An intervention is considered "evidence-based" when:

- Peer-reviewed, documented evidence shows that the intervention is medically effective in reducing morbidity or mortality;
- Reported medical benefits of the intervention outweigh its risks;
- The estimated cost of the intervention is reasonable when compared to its expected benefit; and
- The recommended action is practical and feasible.

Evidence-based benefit design is an approach for developing healthcare benefits. Evidence-based plans promote health care with demonstrated effectiveness by providing more generous coverage for services supported by strong evidence, and less generous coverage for services that are unproven or evidence indicates may be ineffective or unsafe.[3]

Environmental factor: Those determinants of disease that are not transmitted genetically. Diet, tobacco smoking, exposure to toxins, sunlight, pathogens or radiation are common environmental factors that determine a large segment of non-hereditary diseases.

Engagement (beneficiary engagement) refers to the process of turning passive healthcare users into active healthcare consumers. Engagement requires education and motivation.

Evidence–informed: Based on evidence-based recommendations or recommended guidance.

Experimental treatment: A treatment is considered "experimental" if any of the following criteria apply: 1) No reliable evidence demonstrates that the treatment is effective in clinical diagnosis, evaluation, or management of the patient's illness, injury, disease, or its symptoms, or; evaluation of reliable evidence indicates that additional research is necessary before the treatment can be classified as equally or more effective than conventional therapies, 2) the treatment is not of proven benefit or not generally recognized by the medical community as effective or appropriate for the patient's specific diagnosis, 3) there is not sufficient outcome data available to substantiate the treatment's safety, 4) the treatment has not been granted required FDA approval for marketing, or 5) the treatment is provided or performed only in special settings for research purposes.

Family-friendly work-life benefits: Benefits that are perceived to assist parents in their ability to work *and* care for a child or adolescent. Examples include prenatal programs, worksite lactation programs, on-site day care, emergency sick childcare, and flexible working arrangements.

Family Leave and Medical Leave Act (FMLA) requires covered employers to provide up to 12 weeks of unpaid, job-protected leave to ''eligible" employees for certain family and medical reasons.

Fetal abnormalities: Fetal malformation or abnormal development.

Financial: The financial perspective is a common endpoint for assessing performance against a predetermined budget. Financial metrics identify where and how revenue was generated, identify the direct operating costs, and support efforts to identify and reduce business risk.

First-dollar coverage: Medical expense insurance under which no deductible or coinsurance is applicable to covered expenses.

Flex benefit programs allow health plan participants to "flex" their health benefits to best meet their unique needs. Some examples of flex benefits include:

- Extending a single benefit for multiple providers (e.g., home health visits).
- Providing additional benefits for high-risk populations (e.g., increasing preventive dental care visits from the recommended two visits per year to three visits per year for certain children).
- Reducing or eliminating copayment or coinsurance amounts on essential services or products.

Flexible spending accounts (FSAs) are tax-free savings accounts that cover things health plans often do not such as nonprescription drugs, eyeglasses, childcare, dental care, and other qualifying medical expenses.

Group care allows for multiple plan participants to be seen at the same time by an individual provider or a health care team. Group care is a cost-effective form of care that can improve quality and timeliness in specific situations. Group care is most relevant for education-based services such as nutrition counseling or anticipatory guidance.

Health communication encompasses the study and use of communication strategies to inform and influence individual and community decisions that enhance health.

Health literacy: The capability to read, understand, and act on health information.

Health maintenance organization (HMO): A type of managed healthcare system. HMOs aim to reduce healthcare costs by focusing on preventative care and implementing utilization management controls. HMOs provide medical treatment on a prepaid basis in a fixed monthly fee. In return for this fee, most HMOs provide a wide variety of medical services from providers within the HMO network.

Health Plan Employer Data and Information Set (HEDIS®): HEDIS® is a program from the National Committee for Quality Assurance (NCQA) that consists of multiple, diverse measures of clinical and administrative outcomes by which the performance of a health plan can be compared to other plans, national or regional benchmarks, or the plan's performance from previous years.

Health promotion program (also see **wellness program**): Any prevention initiative aimed at changing lifestyle behaviors associated with greater risk of disease. These initiatives actively encourage healthy activities such as substance abuse control, weight management, smoking cessation, stress management, physical activity, or the like.

Health reimbursement accounts (HRAs) are medical care reimbursement plans established by employers that can be used by employees to pay for health care.

Health risk appraisal / health risk assessment (HRA): A standardized assessment tool administered to employees (or other groups of individuals) that measures an individual's wellness and disease risk factors, interest in participating in specific programs, and readiness to change unhealthy lifestyle habits; a survey and/or physical examination that assesses an individual's health status, health risk behaviors, family history of disease, and medical history.

Health savings accounts (HSAs): An account that allows individuals to pay for current health expenses and save for future qualified medical and retiree health expenses on a tax free basis.

Healthcare expenditure: The amount of money spent on health care for services such as hospital care, physicians, or medication.

Healthcare expenditures, National are estimates

of spending for health care in the United States for services such as hospital care, physicians, and medication.

Healthcare team: A group of healthcare professionals ranging from physicians, psychologists, or specialists who work together to recommend diagnoses or treatments.

Immunization (also see vaccination): The administration of a substance, usually by injection, oral, or nasal administration, that produces protective immunity to one or more specific diseases.

Incentive: A benefit or consideration, financial or otherwise, given to induce specific action.

Incidence: The number of *new* cases of a particular illness or condition reported in a given time period (e.g., day, week, year).

Indirect medical expense: Monetary expenditures associated with an illness, condition, or disorder, but not immediately related to treatment of that disorder.

Induction: The process of causing or initiating labor by use of medication or artificial rupture of membranes.

Internal Business Process: This perspective examines processes required to meet customer expectations and business objectives, and helps managers define the total value chain. A typical value chain begins with the process of innovation, ends with services offered to customers *after* a sale, and includes all the activities required to meet the customer's needs.

Key Performance Indicators represent a set of mission critical performance metrics and typically address high-priority issues for an organization. They have a desirable direction and are discriminating (small changes are meaningful), they are based on valid and available data, and they are actionable.

Lactation counseling: Education regarding feeding patterns, proper latch-on, basic positioning, infant arousal techniques, breast care, and breast conditions that a woman should report to her healthcare provider.

Learning and Growth: This perspective examines an organization's investment in its people and their capabilities in order to ensure the long-term success of an organization. It also looks at the culture, leadership, and methods for engaging employees.

Life-years gained: A measure of value gained from a healthcare intervention: the average number of extra years of life resulting from treatment when compared with non-treatment. It does not include measures of quality of life or disability status (e.g., QALY, DALY).

Linguistic competence is the ability of people who speak the dominate language of a region to communicate with individuals who speak another language. Linguistic competence also involves written communication.

Lost productivity: Total limitation in work experienced by an individual. It is a sum of lost workdays and productivity decline.

Lost productivity costs: Employer-borne costs related to reduced employee productivity. Examples include lowered output, reduced customer satisfaction, redundancies in staffing, overtime cost related to no-show employees, etc.

Lost workdays: Days for which an individual reports being unable to complete normal activities due to a health condition.

Lost work time: Time that an employee loses from their regular working hours due to personal illness, or the illness of a child or other family member. Lost work time can also result from medical appointments, care coordination activities, and other health or healthcare-related activities.

Low birthweight: A diagnosis requires a baby to be born weighing 5 lbs. 8 oz or less (2500 g) at birth. Low-birthweight infants are of two different types: those who are born too small because they are born too soon, and those who are born on time, but are too small for their gestational age.

Maximum out-of-pocket expense: The maximum dollar amount a beneficiary is required

to pay out-of-pocket during a year. Until this maximum is met, the employer and beneficiary share in the cost of covered expenses. After the maximum is reached, the employer pays all covered expenses.

Maternal and child health benefits: Healthcare benefits (medical, vision, dental, behavioral health) that are specifically tailored to the needs of women of childbearing-age, children, and adolescents, including those with special health care needs.

Maternal and child health scorecard represents a customized version of the Kaplan and Norton Balanced Scorecard. The maternal and child health scorecard is customized to support the delivery of services by the Human Resources organization and Benefits department, and includes performance metrics for the identified target population.

Medical errors: The failure of a planned action to be completed as intended (error of execution) or the use of a wrong plan to achieve an aim (error of planning).

Medical home: Primary care that is accessible, continuous, comprehensive, family centered, coordinated, compassionate, and culturally effective.

Medically necessary care is prescribed by a physician or other qualified healthcare provider; required to prevent, diagnose, or treat an illness, injury, or disease or its symptoms; help maintain or restore the individual's health or functional capacity; prevent deterioration of the individual's condition; or remedy developmental delays or disabilities; generally agreed to be of clinical value; clinically consistent with the patient's diagnosis and/or symptoms; and appropriate in terms of type, scope, frequency, intensity, duration, and setting.

Metrics: Specific indicators that are measured in order to assess a company's impact on the physical or social environment.

Morbidity: The relative frequency and severity of a disease in a defined population; the result of experiencing illness from a disease or condition (excluding death). For example, untreated type II diabetes may result in morbidities such as blindness, infections, neuropathies, and other problems.

Mortality: The number of deaths in a defined population or more specifically, the number of deaths attributable to a particular type of illness or disease.

Multifetal: A pregnancy in which there are two or more fetuses.

Network: A collection of providers and facilities, usually within a geographical area, designated by the employer or the health plan.

Neonatal: The period of time from birth to 4 weeks of age.

Neonatal intensive care unit (NICU): A specialized intensive care unit in a hospital that provides care only to infants.

Obesity: A condition that is characterized by excessive accumulation and storage of fat in the body and that in an adult is typically indicated by a body mass index of 30 or greater.

Open enrollment is a period of time each year when employers: (a) permit new employees to enroll in a health care plan, and (b) allow employees to make changes to their current medical coverage. During open enrollment, employees may decide to change plans, add or drop a dependent, or add an optional program such as a dental plan.

Out-of-pocket (OOP): All covered healthcare costs that are paid for by the beneficiary (may or may not include premium and deductible amounts). An out-of-pocket maximum is a cap on the amount beneficiaries must pay in coinsurance or copayments.

Perinatal: Occurring in, concerned with, or being in the period around the time of birth.

Perspective: The descriptive label given to the four major measurement categories used to quantify organizational performance within the Balanced Scorecard methodology.

Plan coordination: Coordination of the delivery

of health care when multiple plans administrators/ vendors (e.g., medical, dental, vision) are involved.

Postnatal: Occurring or being after birth.

Preconception: Occurring prior to conception.

Preconception period: The1-year period before a woman becomes pregnant.

Preeclampsia is a serious condition developing in late pregnancy that is characterized by a sudden rise in blood pressure, excessive weight gain, generalized edema, protein in the urine, severe headache, and visual disturbances and that may result in sever complications or death if untreated.

Preferred provider organizations (PPO): A managed healthcare system that consists of a group of doctors and/or hospitals that provides medical services only to a specific group or association that sponsors the PPO. Rather than prepaying for medical care, PPO members pay for services as they are rendered and are reimbursed by the insurance company/plan administrator, less any coinsurance percentage.

Pregnancy discrimination occurs when expectant women are not hired, fired, or otherwise discriminated against due to their pregnancy or intention to become pregnant.

Premature mortality: Deaths that occur among people aged 0 to 74 years. Premature mortality is an important indicator of the general health of a population as a high premature mortality rate indicates poor population health status.

Pregnancy-related costs: Costs of any type that are the direct result of a woman being pregnant. Costs can include medical care, lost productivity, disability, turnover and replacement costs, etc.

Premature (also see preterm birth): Born at less than 37 weeks gestation.

Premium: Agreed upon fees paid for coverage of medical benefits for a defined benefit period. Premiums can be paid by employers, unions, employees, or shared by both the covered individual and the plan sponsor.

Prenatal: Occurring, existing, performed, or used before birth.

Presenteeism: Describes an employee who is at work but not fully functioning while there. In this context, presenteeism refers to those situations whereby an employee's job performance or productivity is impaired by a health problem.

Preterm birth: Birth before 37-weeks is considered "preterm": birth between 34- and 36-weeks is considered "late preterm" and "very preterm" births occur before 32-weeks gestation.

Prevalence: The proportion of the general population affected by a specific illness or condition at a specific point in time or during a defined period of time.

Primary care provider: Clinical care provided by family physicians, pediatricians, internal medicine doctors, or obstetrician/gynecologists who treat general illnesses, provide clinical preventive services, and triage patients for specialized medical care.

Productivity: The amount of output produced by a worker in a given period of time (hour or day, etc.).

Racial and cultural language barriers make it difficult to explain healthcare benefits, programs, and policies to employees and other beneficiaries.

Recommended guidance: A recommendation or guideline that is based on the best-available information for a condition, disease, or health service, but that does not yet have the scientific research support to be considered evidence-based.

Retention: The ability of an employer to keep a given employee or a group of employees for a set period of time (e.g., more than 2 years); a systematic effort by employers to create and foster an environment that encourages current employees to remain employed by having policies and practices in place that address their diverse needs.

Return on investment (ROI): A comparison of the money earned (or lost) on an investment to the amount of money invested. For example, every $1 an employer spends on immunization produces a return of $3 in avoided healthcare costs. It is

important to note that ROI is not a proxy for cost-effectiveness or vice versa. Interventions that are cost-effective or even cost-saving at the societal level do not necessarily yield a positive ROI from the business perspective, although they may provide a better value than other services.

Risk, at-: Possessing a chance of succumbing to a disease or condition due to specific genetic markers, personal history, behaviors, or other factors.

Risk, high: Possessing a greater chance of succumbing to a disease or condition than the general population due to specific genetic markers, personal history, behaviors, a lack of immunity, or other factors.

Risk, low: Possessing a lesser chance of succumbing to a disease or condition than the general population due to specific genetic markers, personal history, behaviors, or other factors.

Screening: A test or examination designed to identify an individual's risk of developing an illness or condition (i.e., blood pressure measurement or cholesterol reading).

Short-term disability (STD) provides employees with income protection against disabilities resulting from a covered physical disease, injury, pregnancy, or mental disorder.

Stages of development: Infancy: birth to 11 months, Early childhood: 1 to 4 years, Middle childhood: 5 to 10 years; Adolescence: Early: 11 to 14 years; Middle: 15 to 17 years; Late: 18 to 21 years.

Side effects: A secondary and usually adverse effect of a treatment.

Strategic performance indicators provide relevant information that enables managers to obtain feedback on performance relative to strategic goals, identify where attention is needed and what action to take.

Strategy map is the resulting document that links an organization's mission and vision with the four perspectives contained in the Balanced Scorecard, and can be used to describe the relationship between the development and execution of a business strategy.

Summary plan description (SPD): A document describing the features of an employer-sponsored plan. The primary purpose of the SPD is to disclose the features of the plan to current and potential plan participants. ERISA requires that certain information be contained in the SPD, including participant rights under ERISA, claims procedures, and funding arrangements.

Unintended pregnancy: A pregnancy that is either mistimed or unwanted at the time of conception.

Unintentional injuries: Injuries and deaths that are considered "accidental" meaning that they were not intended or self-inflicted.

Urgent care: Health care provided in situations of medical duress that have not reached the level of emergency. Claim costs for urgent care services are typically much less than for services delivered in emergency rooms.

Vaccination (also see **immunization**)**:** The administration of a substance, usually by injection, oral, or nasal administration, that protects an individual from developing a specific disease(s).

Value-based purchasing is a benefit design strategy employers can use to align financial incentives for beneficiaries *and* providers to encourage the use of high-value care while discouraging the use of low-value or unproven services. Value-based purchasing brings together information on the quality of health care, including health outcomes and health status, with data on the dollar outlays going towards health.

VBAC (vaginal birth after cesarean): When a woman with a history of cesarean delivery delivers a subsequent child vaginally, it is termed a VBAC birth.

Well-child care is preventive health care for healthy babies, children, and adolescents (birth through age 21); it includes developmental screening, anticipatory guidance, routine tests,

growth monitoring, and other essential services.

Wellness program (also see **health promotion program**): Any prevention initiative aimed at changing lifestyle behaviors associated with greater risk of disease. These initiatives actively encourage healthy activities such as substance abuse control, weight management, smoking cessation, stress management, physical activity, or the like.

Work cutback: Occurs when an employee is required to cutback their regular working hours to accommodate a personal or familial health problem.

Work loss: Time away from a job or an inability to perform normal work activities because of a health problem.

Workplace burden: Any type of economic burden (in this case related to health or healthcare) which affects a company, not including direct healthcare costs. Examples include costs associated with employee turnover, lost productivity, and work cutback.

References

1. Major DA, Allard CB. Child health: a legitimate business concern. *J Occup Health Psychol*. 2004;9(4):306-321.
2. MedNet Online Medical Dictionary. *Evidence-based medicine*. Available at: http://www.medterms.com/script/main/art.asp?articlekey=33300. Accessed on August 14, 2007.
3. National Business Group on Health. *National Committee on Evidence-Based Benefits*. Washington, DC: National Business Group on Health; 2005.

Index

Links to Cost-Calculators and Additional Resources

Cost-Calculators

Alcohol Misuse (General)

- George Washington University Alcohol Treatment ROI Calculator, **http://www.alcoholcostcalculator.org/roi/**

Underage Drinking (Adolescent Alcohol Misuse)

http://www.alcoholcostcalculator.org/kids/

Diabetes (General)

- Diabetes at Work, Conducting a Diabetes Assessment. General Assessment Tool, **http://www.diabetesatwork.org/GettingStarted/AssessmentTool.cfm**

Obesity and Physical Activity (General)

- CDC LEAN *Works!* Obesity Cost Calculator, **http://www.cdc.gov/leanworks/costcalculator/index.html**

Tobacco Use (General)

- America's Health Insurance Plans (AHIP) and Center for Health Research, Kaiser Permanente Tobacco ROI calculator, **http://www.businesscaseroi.org/roi/default.aspx**
- Free & Clear Tobacco Cost Exposure Calculator, **http://www.freeclear.com/quit-for-life/calculator.aspx**

Data Sources

Data Resource Center, National Survey of Children with Special Health Care Needs, www.cshcndata.org

Additional Resources

U.S. Department of Health and Human Services (Federal)

- Advisory Committee on Immunization Practices (ACIP), **http://www.cdc.gov/vaccines/recs/acip/default.htm**
  - Immunization Schedules (pediatric): **http://www.cdc.gov/vaccines/recs/schedules/default.htm#child**
  - Immunization Schedules (adult): **http://www.cdc.gov/vaccines/recs/schedules/default.htm#adult**
- Agency for Healthcare Research and Quality (AHRQ), **http://www.ahrq.gov**
- Centers for Disease Control and Prevention (CDC), **http://www.cdc.gov**
- Healthy People 2010 Goals, **http://www.healthypeople.gov/**

- National Guidelines Clearinghouse, **http://www.guideline.gov/**
- National Healthcare Quality Report (AHRQ), **http://www.innovations.ahrq.gov/qualitytools/**
- National Institutes of Health (NIH), **http://www.nih.gov**
- The National Women's Health Information Center, **http://www.4women.gov/pregnancy/**
- U.S. Department of Health and Human Services (USDHHS), **http://www.dhhs.gov/**
- U.S. Preventive Services Task Force (USPSTF), **http://www.ahrq.gov/clinic/prevenix.htm**
- U.S. Public Health Service (USPHS), **http://www.usphs.gov**
- U.S. Surgeon General, **http://www.surgeongeneral.gov/**

Professional Organizations

- American Academy of Family Physicians (AAFP), **http://www.aafp.org**
- American Academy of Pediatrics (AAP), **http://www.aap.org**
- American College of Obstetricians and Gynecologists (ACOG), **http://www.acog.org**
- American Congress of Occupational and Environmental Medicine (ACOEM), **http://www.acoem.org/**
- American College of Preventive Medicine (ACPM), **http://www.acpm.org/**
- American Medical Association (AMA), **http://www.ama-assn.org**
- American Speech-Language-Hearing Association (ASHA), **http://www.asha.org**

Other

- Institute of Medicine (IOM), **http://www.iom.edu**
- National Committee on Quality Assurance (NCQA), **http://www.ncqa.org**
- HEDIS Data Set, National Committee on Quality Assurance (NCQA), **http://www.ncqa.org/tabid/78/Default.aspx**

Condition/Disease Specific Resources (Federal)

- National Center for Injury Prevention, **http://www.cdc.gov/injury/index.html**
- National Institute on Alcohol Abuse and Alcoholism (NIAAA), **http://www.niaaa.nih.gov/**
- National Institute of Child Health and Human Development, **http://www.nichd.nih.gov/**
- National Institute on Deafness and Other Communication Disorders, **http://www.nidcd.nih.gov/**

Condition/Disease Specific Resources (Non-Federal)

- American Cancer Society (ACS), **http://www.cancer.org**
- American Dental Association (ADA), **http://www.ada.org**
- American Diabetes Association (ADA), **http://www.diabetes.org**
- American Dietetics Association (ADA), **http://www.eatright.org**
- American Heart Association (AHA), **http://www.americanheart.org**
- American Managed Behavioral Healthcare Association (AMBHA), **http://www.ambha.org**
- March of Dimes, **http://www.marchofdimes.com**
- National Mental Health Association (NHMA), **http://www.nmha.org**

Supplemental Guides and Resources

- Agency for Healthcare Research and Quality, Guide to Clinical Preventive Services, 2009 Services 2010-2011, **http://www.ahrq.gov/clinic/pocketgd.htm**
- Agency for Healthcare Research and Quality, 2005 National Healthcare Disparities Report, **http://www.ahrq.gov/qual/nhdr06/nhdr06.htm**
- Centers for Disease Control and Prevention, The CDC Guide to Breastfeeding Interventions, **http://www.cdc.gov/breastfeeding/resources/guide.htm**
- Centers for Disease Control and Prevention, The Community Guide to Preventive Services, **http://www.thecommunityguide.org/**
- Centers for Disease Control and Prevention, Pregnancy and Reproductive Health: Guidelines and Recommendations, **http://www.cdc.gov/women/gderecom/reprhlth.htm**

National Business Group on Health Resources

Benefit Design

- Consumer Driven Healthcare for Children: An Employer's Guide to Developing Child and Adolescent Benefits, **http://www.businessgrouphealth.org/benefitstopics/et_childbenefits.cfm**
- The Purchaser's Guide to Clinical Preventive Services: Moving Science into Coverage, **http://www.businessgrouphealth.org/preventive/**
- An Employer's Guide to Behavioral Health Services: A Roadmap and Recommendations for Evaluating, Designing, and Implementing Behavioral Health Services, **www.businessgrouphealth.org/pdfs/fullreport_behavioralHealthservices.pdf**
- Engaging Large Employers Regarding Evidence-Based Behavioral Health Treatment, **http://www.businessgrouphealth.org/benefitstopics/et_mentalhealth.cfm**

Maternal and Child Health: Additional Resources

- Autism: Facts for Employers, **http://www.businessgrouphealth.org/pdfs/NBGH%20CFP%20Autism%20FS_Final.pdf**
- Preventing, Identifying and Treating Maternal Depression: Tools for Employers, **http://www.businessgrouphealth.org/pdfs/mat_depression.pdf**
- An Employer's Guide to Child and Adolescent Mental Health: Recommendations for the workplace, health plan, and Employee Assistance Programs, **http://www.businessgrouphealth.org/pdfs/CAMH_Guide_LoRes.pdf.**

Communication Tools
www.businessgrouphealth.org/usinginformation/Default.aspx

- **If You're a Health Care Consumer, Speak Up**
- **Using Antibiotics Safely**
- **Medication Safety: 10 Recommendations For Your Protection**
- **Think It Through: Weighing the Risks and Benefits of New Medications**
- **Caring for Children with Ear Infections**

Glossary

5 C's of enrollment include cost, coverage information, changes to plans, comparisons to last year's plans and options, and current options.

Absenteeism: Missing days from work. Absenteeism can be caused by any type of health problem and can be counted as general sick leave, workers' compensation, short-term disability, long-term disability, family medical leave, paid time off (PTO), or unpaid leave. Premature mortality also results in absenteeism.

Actuarial analysis: A forecast developed by specialized actuarial methods, giving the probability of future events for a given population, such as healthcare costs.

Allowed Charges: The amount of the bill either the insurance company or the patient will be responsible for based on whether the health care provider is a participating or non-participating physician.

Annual/lifetime caps: A cap on the benefits paid during the duration of a health insurance/coverage policy.

Antenatal: A synonym for prenatal; occurring during pregnancy.

Anticipatory guidance: Information and counseling to help families understand key developmental goals for children and adolescents, such as success in school and safety.

At-work productivity decline (also see presenteeism): Reduced normal activity and job output due to a health problem.

Audience-centered perspective: Communication that reflects the lives and values of the targeted group.

Balanced Scorecard Methodology: A concept for organizing and measuring a company's key activities in relation to its vision and strategies, to give managers a comprehensive view of leading and lagging performance indicators associated with a business.

Benchmarking: Baseline comparison exercises employers engage in order to assess their relative position in the marketplace.

Birth cohort: A group of people born during a particular period or year.

Carried to term/ full term birth: A gestation period equal to, or more than, 38 weeks.

Case management is the arrangement, coordination, and monitoring of healthcare services to meet the needs of a particular patient and his/her family.

Cesarean section (c-section): A major abdominal surgery in which a surgeon cuts through a woman's abdomen and uterus allowing a baby to be delivered.

Childbearing age: A woman aged 18 to 44 years.

Childcare breakdowns occur when parents must provide care for their child unexpectedly. This can result from child illness or injury, school closures, daycare closures, or other causes.

Children with special healthcare needs are those who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that usually required by children of the same age. Children who are victims of abuse or trauma and children in foster care also qualify as "children with special needs" due to their demonstrated risk for physical, emotional, and behavioral problems.

Chronic illness (specific to childhood): A health condition that is expected to last 3 months or longer and involves one or more of the following: limitation of age-appropriate functions, disfigurement, dependency on medical technology, medication, special diet, more medical care than is usual for the child's age, or special ongoing treatments.[1] Managing a child's chronic illness typically requires a routine medical treatment regimen (e.g., maintenance drugs) and crisis care (e.g., periodic hospitalization) .

Coinsurance: A form of medical cost-sharing in a

health plan that requires a covered person to pay a stated percentage (e.g., 10%) of medical expenses.

Congenital: A problem that existed at the time of birth or developed *in utero* (before birth).

Copayments: A form of medical cost-sharing in a health plan that requires a covered person to pay a fixed dollar amount when a medical service is received.

Cost, total: The sum of all direct and indirect costs.

Cost, direct: Fixed and variables costs directly associated with a medical condition or healthcare intervention.

Cost, indirect are costs separate from medical care that result from a medical problem. Indirect costs include costs related to absenteeism, lost productivity, and long-term disability.

Cost-benefit analysis: An analysis tool that measures the results or benefits of a decision compared with the required costs.

Cost-effective: A determination that the net cost per unit of health generated by an intervention is favorable in comparison with other health services.

Cost-offset: A cost-offset occurs when the use of one type of healthcare service (e.g., a preventive service) either averts or reduces the cost that would occur from use of another healthcare service (e.g., treatment service). For example, investing in preventive dental services has been proven to reduce the need and costs of restorative care.

Cost-saving: The reduction in healthcare expenses resulting from an intervention or program after accounting for the cost required to develop, implement, and maintain the given intervention or program.

Cost-sharing: Allocation of some of the health plan benefit costs to plan participants. Cost-sharing strategies commonly include premiums, deductibles, coinsurance or copayment, and annual of lifetime benefit maximums. *The National Business Group on Health's Plan Benefit Model does not recommend the use of deductibles or lifetime limits/caps.*

Critical success factors represent primary descriptive references about the organization's goals. Each critical success factor can be quantified into a subjective or objective metric know as a key performance indicator.

Cultural competence is a set of policies, attitudes, beliefs, and behaviors that enable healthcare purchasers, health plans, and providers to work effectively with other races, ethnic groups, and cultures.

Deductible: A fixed dollar amount during the benefit period - usually a year - that a covered person pays before the insurer/employer starts to make payments for covered medical services. Plans may have both per individual and per family deductibles. *The National Business Group on Health's Plan Benefit Model does not recommend the use of deductibles.*

Dependent: A person that is coved under an insurance plan because they meet the necessary requirements of relation to the employee such as being a spouse or child.

Dietary supplements are products taken orally that contain one or more ingredients that are intended to supplement one's diet and are not considered food.

Direct medical expense: The economic value directly attributable to a particular clinical action, purchase, program or initiative; the amount spent for diagnosis, treatment or prevention of medical problems. Direct medical expenses include visits to physician's offices and treatment expenditures.

Disincentive: A negative motivational influence.

Domains represent descriptive terms used in the Balanced Scorecard for categorizing similar critical success factors and support a specific Perspective.

Doula: A woman experienced in childbirth who provides advice, information, emotional support, and physical comfort to a pregnant woman before, during, and immediately after childbirth.

Early exit from the workforce refers to the situation when a working parent is forced to quit

his/her job in order to provide full-time care to a sick, injured, or disabled child.

Elective cesarean section: The surgical delivery of a baby in response to patient or provider choice, not medical necessity.

Emergency room/ department: A hospital room or area staffed and equipped for the reception and treatment of persons with conditions (as illness or trauma) requiring immediate medical care.

Employee assistance program: An employer-sponsored service designed to assist employees, spouses, and dependent children in finding help for emotional, drug/alcohol, family, and other personal or job-related problems.

Epidural: Anesthesia produced by injection of a local anesthetic into the peridural space of the spinal cord beneath the ligamentum flavum — called also *peridural anesthesia.*

Evidence-based medicine: The conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence-based medicine integrates individual clinical expertise with the best available external clinical evidence from systematic research.[2] An intervention is considered "evidence-based" when:

- Peer-reviewed, documented evidence shows that the intervention is medically effective in reducing morbidity or mortality;
- Reported medical benefits of the intervention outweigh its risks;
- The estimated cost of the intervention is reasonable when compared to its expected benefit; and
- The recommended action is practical and feasible.

Evidence-based benefit design is an approach for developing healthcare benefits. Evidence-based plans promote health care with demonstrated effectiveness by providing more generous coverage for services supported by strong evidence, and less generous coverage for services that are unproven or evidence indicates may be ineffective or unsafe.[3]

Environmental factor: Those determinants of disease that are not transmitted genetically. Diet, tobacco smoking, exposure to toxins, sunlight, pathogens or radiation are common environmental factors that determine a large segment of non-hereditary diseases.

Engagement (beneficiary engagement) refers to the process of turning passive healthcare users into active healthcare consumers. Engagement requires education and motivation.

Evidence–informed: Based on evidence-based recommendations or recommended guidance.

Experimental treatment: A treatment is considered "experimental" if any of the following criteria apply: 1) No reliable evidence demonstrates that the treatment is effective in clinical diagnosis, evaluation, or management of the patient's illness, injury, disease, or its symptoms, or; evaluation of reliable evidence indicates that additional research is necessary before the treatment can be classified as equally or more effective than conventional therapies, 2) the treatment is not of proven benefit or not generally recognized by the medical community as effective or appropriate for the patient's specific diagnosis, 3) there is not sufficient outcome data available to substantiate the treatment's safety, 4) the treatment has not been granted required FDA approval for marketing, or 5) the treatment is provided or performed only in special settings for research purposes.

Family-friendly work-life benefits: Benefits that are perceived to assist parents in their ability to work *and* care for a child or adolescent. Examples include prenatal programs, worksite lactation programs, on-site day care, emergency sick childcare, and flexible working arrangements.

Family Leave and Medical Leave Act (FMLA) requires covered employers to provide up to 12 weeks of unpaid, job-protected leave to ''eligible" employees for certain family and medical reasons.

Fetal abnormalities: Fetal malformation or abnormal development.

Financial: The financial perspective is a common endpoint for assessing performance against a predetermined budget. Financial metrics identify where and how revenue was generated, identify the direct operating costs, and support efforts to identify and reduce business risk.

First-dollar coverage: Medical expense insurance under which no deductible or coinsurance is applicable to covered expenses.

Flex benefit programs allow health plan participants to "flex" their health benefits to best meet their unique needs. Some examples of flex benefits include:

- Extending a single benefit for multiple providers (e.g., home health visits).
- Providing additional benefits for high-risk populations (e.g., increasing preventive dental care visits from the recommended two visits per year to three visits per year for certain children).
- Reducing or eliminating copayment or coinsurance amounts on essential services or products.

Flexible spending accounts (FSAs) are tax-free savings accounts that cover things health plans often do not such as nonprescription drugs, eyeglasses, childcare, dental care, and other qualifying medical expenses.

Group care allows for multiple plan participants to be seen at the same time by an individual provider or a health care team. Group care is a cost-effective form of care that can improve quality and timeliness in specific situations. Group care is most relevant for education-based services such as nutrition counseling or anticipatory guidance.

Health communication encompasses the study and use of communication strategies to inform and influence individual and community decisions that enhance health.

Health literacy: The capability to read, understand, and act on health information.

Health maintenance organization (HMO): A type of managed healthcare system. HMOs aim to reduce healthcare costs by focusing on preventative care and implementing utilization management controls. HMOs provide medical treatment on a prepaid basis in a fixed monthly fee. In return for this fee, most HMOs provide a wide variety of medical services from providers within the HMO network.

Health Plan Employer Data and Information Set (HEDIS®): HEDIS® is a program from the National Committee for Quality Assurance (NCQA) that consists of multiple, diverse measures of clinical and administrative outcomes by which the performance of a health plan can be compared to other plans, national or regional benchmarks, or the plan's performance from previous years.

Health promotion program (also see **wellness program**): Any prevention initiative aimed at changing lifestyle behaviors associated with greater risk of disease. These initiatives actively encourage healthy activities such as substance abuse control, weight management, smoking cessation, stress management, physical activity, or the like.

Health reimbursement accounts (HRAs) are medical care reimbursement plans established by employers that can be used by employees to pay for health care.

Health risk appraisal / health risk assessment (HRA): A standardized assessment tool administered to employees (or other groups of individuals) that measures an individual's wellness and disease risk factors, interest in participating in specific programs, and readiness to change unhealthy lifestyle habits; a survey and/or physical examination that assesses an individual's health status, health risk behaviors, family history of disease, and medical history.

Health savings accounts (HSAs): An account that allows individuals to pay for current health expenses and save for future qualified medical and retiree health expenses on a tax free basis.

Healthcare expenditure: The amount of money spent on health care for services such as hospital care, physicians, or medication.

Healthcare expenditures, National are estimates

of spending for health care in the United States for services such as hospital care, physicians, and medication.

Healthcare team: A group of healthcare professionals ranging from physicians, psychologists, or specialists who work together to recommend diagnoses or treatments.

Immunization (also see vaccination): The administration of a substance, usually by injection, oral, or nasal administration, that produces protective immunity to one or more specific diseases.

Incentive: A benefit or consideration, financial or otherwise, given to induce specific action.

Incidence: The number of *new* cases of a particular illness or condition reported in a given time period (e.g., day, week, year).

Indirect medical expense: Monetary expenditures associated with an illness, condition, or disorder, but not immediately related to treatment of that disorder.

Induction: The process of causing or initiating labor by use of medication or artificial rupture of membranes.

Internal Business Process: This perspective examines processes required to meet customer expectations and business objectives, and helps managers define the total value chain. A typical value chain begins with the process of innovation, ends with services offered to customers *after* a sale, and includes all the activities required to meet the customer's needs.

Key Performance Indicators represent a set of mission critical performance metrics and typically address high-priority issues for an organization. They have a desirable direction and are discriminating (small changes are meaningful), they are based on valid and available data, and they are actionable.

Lactation counseling: Education regarding feeding patterns, proper latch-on, basic positioning, infant arousal techniques, breast care, and breast conditions that a woman should report to her healthcare provider.

Learning and Growth: This perspective examines an organization's investment in its people and their capabilities in order to ensure the long-term success of an organization. It also looks at the culture, leadership, and methods for engaging employees.

Life-years gained: A measure of value gained from a healthcare intervention: the average number of extra years of life resulting from treatment when compared with non-treatment. It does not include measures of quality of life or disability status (e.g., QALY, DALY).

Linguistic competence is the ability of people who speak the dominate language of a region to communicate with individuals who speak another language. Linguistic competence also involves written communication.

Lost productivity: Total limitation in work experienced by an individual. It is a sum of lost workdays and productivity decline.

Lost productivity costs: Employer-borne costs related to reduced employee productivity. Examples include lowered output, reduced customer satisfaction, redundancies in staffing, overtime cost related to no-show employees, etc.

Lost workdays: Days for which an individual reports being unable to complete normal activities due to a health condition.

Lost work time: Time that an employee loses from their regular working hours due to personal illness, or the illness of a child or other family member. Lost work time can also result from medical appointments, care coordination activities, and other health or healthcare-related activities.

Low birthweight: A diagnosis requires a baby to be born weighing 5 lbs. 8 oz or less (2500 g) at birth. Low-birthweight infants are of two different types: those who are born too small because they are born too soon, and those who are born on time, but are too small for their gestational age.

Maximum out-of-pocket expense: The maximum dollar amount a beneficiary is required

to pay out-of-pocket during a year. Until this maximum is met, the employer and beneficiary share in the cost of covered expenses. After the maximum is reached, the employer pays all covered expenses.

Maternal and child health benefits: Healthcare benefits (medical, vision, dental, behavioral health) that are specifically tailored to the needs of women of childbearing-age, children, and adolescents, including those with special health care needs.

Maternal and child health scorecard represents a customized version of the Kaplan and Norton Balanced Scorecard. The maternal and child health scorecard is customized to support the delivery of services by the Human Resources organization and Benefits department, and includes performance metrics for the identified target population.

Medical errors: The failure of a planned action to be completed as intended (error of execution) or the use of a wrong plan to achieve an aim (error of planning).

Medical home: Primary care that is accessible, continuous, comprehensive, family centered, coordinated, compassionate, and culturally effective.

Medically necessary care is prescribed by a physician or other qualified healthcare provider; required to prevent, diagnose, or treat an illness, injury, or disease or its symptoms; help maintain or restore the individual's health or functional capacity; prevent deterioration of the individual's condition; or remedy developmental delays or disabilities; generally agreed to be of clinical value; clinically consistent with the patient's diagnosis and/or symptoms; and appropriate in terms of type, scope, frequency, intensity, duration, and setting.

Metrics: Specific indicators that are measured in order to assess a company's impact on the physical or social environment.

Morbidity: The relative frequency and severity of a disease in a defined population; the result of experiencing illness from a disease or condition (excluding death). For example, untreated type II diabetes may result in morbidities such as blindness, infections, neuropathies, and other problems.

Mortality: The number of deaths in a defined population or more specifically, the number of deaths attributable to a particular type of illness or disease.

Multifetal: A pregnancy in which there are two or more fetuses.

Network: A collection of providers and facilities, usually within a geographical area, designated by the employer or the health plan.

Neonatal: The period of time from birth to 4 weeks of age.

Neonatal intensive care unit (NICU): A specialized intensive care unit in a hospital that provides care only to infants.

Obesity: A condition that is characterized by excessive accumulation and storage of fat in the body and that in an adult is typically indicated by a body mass index of 30 or greater.

Open enrollment is a period of time each year when employers: (a) permit new employees to enroll in a health care plan, and (b) allow employees to make changes to their current medical coverage. During open enrollment, employees may decide to change plans, add or drop a dependent, or add an optional program such as a dental plan.

Out-of-pocket (OOP): All covered healthcare costs that are paid for by the beneficiary (may or may not include premium and deductible amounts). An out-of-pocket maximum is a cap on the amount beneficiaries must pay in coinsurance or copayments.

Perinatal: Occurring in, concerned with, or being in the period around the time of birth.

Perspective: The descriptive label given to the four major measurement categories used to quantify organizational performance within the Balanced Scorecard methodology.

Plan coordination: Coordination of the delivery

of health care when multiple plans administrators/ vendors (e.g., medical, dental, vision) are involved.

Postnatal: Occurring or being after birth.

Preconception: Occurring prior to conception.

Preconception period: The1-year period before a woman becomes pregnant.

Preeclampsia is a serious condition developing in late pregnancy that is characterized by a sudden rise in blood pressure, excessive weight gain, generalized edema, protein in the urine, severe headache, and visual disturbances and that may result in sever complications or death if untreated.

Preferred provider organizations (PPO): A managed healthcare system that consists of a group of doctors and/or hospitals that provides medical services only to a specific group or association that sponsors the PPO. Rather than prepaying for medical care, PPO members pay for services as they are rendered and are reimbursed by the insurance company/plan administrator, less any coinsurance percentage.

Pregnancy discrimination occurs when expectant women are not hired, fired, or otherwise discriminated against due to their pregnancy or intention to become pregnant.

Premature mortality: Deaths that occur among people aged 0 to 74 years. Premature mortality is an important indicator of the general health of a population as a high premature mortality rate indicates poor population health status.

Pregnancy-related costs: Costs of any type that are the direct result of a woman being pregnant. Costs can include medical care, lost productivity, disability, turnover and replacement costs, etc.

Premature (also see preterm birth): Born at less than 37 weeks gestation.

Premium: Agreed upon fees paid for coverage of medical benefits for a defined benefit period. Premiums can be paid by employers, unions, employees, or shared by both the covered individual and the plan sponsor.

Prenatal: Occurring, existing, performed, or used before birth.

Presenteeism: Describes an employee who is at work but not fully functioning while there. In this context, presenteeism refers to those situations whereby an employee's job performance or productivity is impaired by a health problem.

Preterm birth: Birth before 37-weeks is considered "preterm": birth between 34- and 36-weeks is considered "late preterm" and "very preterm" births occur before 32-weeks gestation.

Prevalence: The proportion of the general population affected by a specific illness or condition at a specific point in time or during a defined period of time.

Primary care provider: Clinical care provided by family physicians, pediatricians, internal medicine doctors, or obstetrician/gynecologists who treat general illnesses, provide clinical preventive services, and triage patients for specialized medical care.

Productivity: The amount of output produced by a worker in a given period of time (hour or day, etc.).

Racial and cultural language barriers make it difficult to explain healthcare benefits, programs, and policies to employees and other beneficiaries.

Recommended guidance: A recommendation or guideline that is based on the best-available information for a condition, disease, or health service, but that does not yet have the scientific research support to be considered evidence-based.

Retention: The ability of an employer to keep a given employee or a group of employees for a set period of time (e.g., more than 2 years); a systematic effort by employers to create and foster an environment that encourages current employees to remain employed by having policies and practices in place that address their diverse needs.

Return on investment (ROI): A comparison of the money earned (or lost) on an investment to the amount of money invested. For example, every $1 an employer spends on immunization produces a return of $3 in avoided healthcare costs. It is

important to note that ROI is not a proxy for cost-effectiveness or vice versa. Interventions that are cost-effective or even cost-saving at the societal level do not necessarily yield a positive ROI from the business perspective, although they may provide a better value than other services.

Risk, at-: Possessing a chance of succumbing to a disease or condition due to specific genetic markers, personal history, behaviors, or other factors.

Risk, high: Possessing a greater chance of succumbing to a disease or condition than the general population due to specific genetic markers, personal history, behaviors, a lack of immunity, or other factors.

Risk, low: Possessing a lesser chance of succumbing to a disease or condition than the general population due to specific genetic markers, personal history, behaviors, or other factors.

Screening: A test or examination designed to identify an individual's risk of developing an illness or condition (i.e., blood pressure measurement or cholesterol reading).

Short-term disability (STD) provides employees with income protection against disabilities resulting from a covered physical disease, injury, pregnancy, or mental disorder.

Stages of development: Infancy: birth to 11 months, Early childhood: 1 to 4 years, Middle childhood: 5 to 10 years; Adolescence: Early: 11 to 14 years; Middle: 15 to 17 years; Late: 18 to 21 years.

Side effects: A secondary and usually adverse effect of a treatment.

Strategic performance indicators provide relevant information that enables managers to obtain feedback on performance relative to strategic goals, identify where attention is needed and what action to take.

Strategy map is the resulting document that links an organization's mission and vision with the four perspectives contained in the Balanced Scorecard, and can be used to describe the relationship between the development and execution of a business strategy.

Summary plan description (SPD): A document describing the features of an employer-sponsored plan. The primary purpose of the SPD is to disclose the features of the plan to current and potential plan participants. ERISA requires that certain information be contained in the SPD, including participant rights under ERISA, claims procedures, and funding arrangements.

Unintended pregnancy: A pregnancy that is either mistimed or unwanted at the time of conception.

Unintentional injuries: Injuries and deaths that are considered "accidental" meaning that they were not intended or self-inflicted.

Urgent care: Health care provided in situations of medical duress that have not reached the level of emergency. Claim costs for urgent care services are typically much less than for services delivered in emergency rooms.

Vaccination (also see **immunization**)**:** The administration of a substance, usually by injection, oral, or nasal administration, that protects an individual from developing a specific disease(s).

Value-based purchasing is a benefit design strategy employers can use to align financial incentives for beneficiaries *and* providers to encourage the use of high-value care while discouraging the use of low-value or unproven services. Value-based purchasing brings together information on the quality of health care, including health outcomes and health status, with data on the dollar outlays going towards health.

VBAC (vaginal birth after cesarean): When a woman with a history of cesarean delivery delivers a subsequent child vaginally, it is termed a VBAC birth.

Well-child care is preventive health care for healthy babies, children, and adolescents (birth through age 21); it includes developmental screening, anticipatory guidance, routine tests,

growth monitoring, and other essential services.

Wellness program (also see **health promotion program**): Any prevention initiative aimed at changing lifestyle behaviors associated with greater risk of disease. These initiatives actively encourage healthy activities such as substance abuse control, weight management, smoking cessation, stress management, physical activity, or the like.

Work cutback: Occurs when an employee is required to cutback their regular working hours to accommodate a personal or familial health problem.

Work loss: Time away from a job or an inability to perform normal work activities because of a health problem.

Workplace burden: Any type of economic burden (in this case related to health or healthcare) which affects a company, not including direct healthcare costs. Examples include costs associated with employee turnover, lost productivity, and work cutback.

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