Currently more than 133 million Americans (45%) have at least one chronic disease, and seven out of every ten deaths in the U.S. are attributed to chronic diseases, according to the Centers for Disease Control and Prevention (CDC). Chronic diseases and their impact on both direct and indirect costs have caught the attention of employers. This Hewitt trends bulletin provides an overview of chronic diseases and takes a focused look at one particular chronic disease, diabetes. It explores diabetes trends, costs, prevention and treatment, and how employers and health plans are targeting diabetes.

**Chronic Disease**
The U.S. National Center for Health Statistics defines a chronic disease as one lasting three months or more. Chronic diseases generally cannot be prevented by vaccines or cured by medication. Most of the conditions require careful management for effective long-term treatment. The leading chronic diseases in developed countries include cardiovascular disease, cancer, diabetes, and obesity. The Milken Institute has projected there will be 230 million reported cases of chronic diseases in the U.S. by 2023, a 42% increase from 2003.¹

**Chronic Disease Cost**
Chronic diseases have severe effects on the U.S. economy because they are not only very expensive to treat, but they also can cause extensive productivity losses. The Agency for Healthcare Research, part of the U.S. Department of Health and Human Services, conducts the Medical Expenditure Panel Survey (MEPS), which monitors chronic disease trends in the United States. A Milken Institute analysis of MEPS data found that expenditures to treat chronic disease totaled $277 billion in 2003.²

**Combined Treatment Expenditures and Lost Economic Productivity by Chronic Disease (in billions)**

<table>
<thead>
<tr>
<th>Chronic Disease</th>
<th>Treatment Expenditure</th>
<th>Productivity Losses</th>
<th>Total Economic Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancers</td>
<td>$48</td>
<td>$271</td>
<td>$319</td>
</tr>
<tr>
<td>Diabetes</td>
<td>$27</td>
<td>$105</td>
<td>$132</td>
</tr>
<tr>
<td>Heart disease</td>
<td>$65</td>
<td>$105</td>
<td>$170</td>
</tr>
<tr>
<td>Hypertension</td>
<td>$33</td>
<td>$280</td>
<td>$313</td>
</tr>
<tr>
<td>Mental disorders</td>
<td>$46</td>
<td>$171</td>
<td>$217</td>
</tr>
<tr>
<td>Pulmonary conditions</td>
<td>$45</td>
<td>$94</td>
<td>$139</td>
</tr>
<tr>
<td>Stroke</td>
<td>$14</td>
<td>$22</td>
<td>$36</td>
</tr>
</tbody>
</table>


² Ibid.
**Employer Trends**

Hewitt’s survey report, *Challenges for Health Care in Uncertain Times 2009*, examines data collected from its tenth annual health care survey, *The Road Ahead—Emerging Health Trends 2009*. Hewitt surveyed 343 executives and found 80% of companies are targeting specific health conditions in their employee populations, up from 51% in 2008. The top conditions targeted by employers include cardiovascular disease (69%) and diabetes (75%), which are two of the most costly and prevalent chronic conditions in the United States. The following sections examine diabetes in more detail.

**Diabetes**

Hewitt data indicates that an employer with 9,500 employees and 500 pre-65 retirees spends about $18 million to $22 million on direct medical care for its diabetic population. To better understand the impact diabetes has on individuals and employers, we will look at the types of diabetes, diagnostic trends, costs, prevention and treatment, and lastly at both employer and health plan trends.

**Types of Diabetes**

The CDC defines diabetes as “a group of diseases marked by high levels of blood glucose resulting from defects in insulin production, insulin action, or both.” The four types of diabetes are outlined below:

- **Type 1 Diabetes**—Condition that develops when the body’s immune system destroys the pancreatic beta cells that make the hormone insulin to regulate blood glucose. There is no known prevention, and the condition must be regulated through insulin delivered by injection or a pump. Type 1 diabetes is typically found in children and young adults, but can occur at any age.

- **Type 2 Diabetes**—Condition that usually begins as insulin resistance, a disorder in which the cells do not use insulin properly. It accounts for 90% to 95% of all diagnosed cases and is associated with older age, obesity, family history of diabetes, and many other factors.

- **Gestational Diabetes**—Form of glucose intolerance diagnosed during pregnancy.

- **Pre-diabetes**—Condition in which individuals have blood glucose levels higher than normal but not high enough to be classified as diabetes.

**Diagnostic Trends**

According to the CDC, diabetes now affects nearly 24 million Americans (8% of the U.S. population). An additional 57 million are estimated to have “pre-diabetes,” or elevated blood sugar levels, which puts them at an increased risk for diabetes. These figures are projected to double by 2025. The complications attributed to diabetes include loss of eyesight, heart disease, stroke, kidney disease, nerve damage, and loss of limbs, all of which can lead to hospitalization and premature death. According to the CDC, diabetes is the seventh leading cause of death in the U.S.

![Diabetes Trends Among Ethnic Groups/Minority Populations (% of Population With Diabetes Diagnosis 2004–2006)](image)

Taking this a step further, the CDC has looked at the rate of diagnosed diabetes and the disparities that exist among ethnic groups and minority populations in the U.S. The results continue to show higher levels of diabetes among certain groups and populations. Over

15% of the Native American/Alaskan Native population and over 10% of the Black and Hispanic populations in the U.S. were diagnosed with diabetes in 2004–2006.

A recent *Health Affairs* study addresses the need to assess comorbidity among diabetes patients. Comorbidity is the presence of one or more disorders (or diseases) in addition to a primary disease or disorder (such as diabetes). The report breaks down the spending by diabetics in 2004 by medical condition. In 2004, diabetics spent $190.4 billion in total for health care, nearly seven times the amount ($27.9 billion) they spent to treat their diabetes.

The results of this study have implications for future policy interventions based on diabetes spend. The study suggests that policy interventions could be designed for targeted populations of individuals with multiple conditions (e.g., diabetics with other conditions).

### Spending by Diabetics in the U.S. by Medical Condition, 2004 (in billions)

<table>
<thead>
<tr>
<th>Medical Condition</th>
<th>Cost (in billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>$27.9</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
<td>$4.5</td>
</tr>
<tr>
<td>Heart conditions</td>
<td>$23.4</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>$5.4</td>
</tr>
<tr>
<td>Hypertension</td>
<td>$9.8</td>
</tr>
<tr>
<td>Kidney disease</td>
<td>$9.1</td>
</tr>
<tr>
<td>Other</td>
<td>$110.3</td>
</tr>
</tbody>
</table>


### Cost of Diabetes

The cost of diabetes can be captured in various ways, highlighting the far-reaching impact of the condition. According to the American Diabetes Association (ADA), one in every five health care dollars is spent caring for someone with diabetes. CDC data indicates that diabetics on average have medical expenditures that are 2.3 times higher than what expenditures would be in the absence of diabetes. The “National Diabetes Economic Barometer Study” reported that diabetes costs totaled $217.5 billion in 2007. These figures are broken down even further by each type of diabetes.

### 2007 Diabetes Costs

<table>
<thead>
<tr>
<th>Type of Diabetes</th>
<th>Estimated Population</th>
<th>Total Cost</th>
<th>Medical Costs</th>
<th>Indirect Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1 Diabetes</td>
<td>1 million</td>
<td>$10.5 billion</td>
<td>$4.4 billion</td>
<td>$14.9 billion</td>
</tr>
<tr>
<td>Type 2 Diabetes</td>
<td>16.5 million</td>
<td>$159.5 billion</td>
<td>$105.7 billion</td>
<td>$53.8 billion</td>
</tr>
<tr>
<td>Pre-Diabetes</td>
<td>57 million</td>
<td>$25 billion</td>
<td>$25 billion</td>
<td>*</td>
</tr>
<tr>
<td>Undiagnosed Diabetes</td>
<td>6.3 million</td>
<td>$18 billion</td>
<td>$11 billion</td>
<td>$7 billion</td>
</tr>
<tr>
<td>Gestational Diabetes</td>
<td>180,000 pregnancies</td>
<td>$636 million</td>
<td>$623 million</td>
<td>*</td>
</tr>
</tbody>
</table>

* Data was not provided.


---

The ADA tracks the economic costs of diabetes in the U.S. As of March 2008, the total estimated cost of diabetes in 2007 was $174 billion, including $116 billion in excess medical expenditures and $58 billion in reduced national productivity. Medical costs associated with diabetes included $27 billion for care to directly treat diabetes, $58 billion to treat the portion of diabetes-related chronic complications, and $31 billion in general medical costs.

### Medical Expenditures Attributed to Diabetes

<table>
<thead>
<tr>
<th>Expenditures</th>
<th>Percent of Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital inpatient care</td>
<td>50%</td>
</tr>
<tr>
<td>Diabetes medication and supplies</td>
<td>12%</td>
</tr>
<tr>
<td>Retail prescriptions to treat complications</td>
<td>11%</td>
</tr>
<tr>
<td>Physician office visits</td>
<td>9%</td>
</tr>
</tbody>
</table>


The prevention and treatment of diabetes require multi-pronged efforts, including examinations, education, medication, diet, and exercise. Diabetics should monitor their glucose levels as directed by their physician and utilize tools and resources to help them manage their condition. It is essential for diabetics to have routine exams to monitor their health. The CDC states that diabetes control is a good investment and provides numerous statistics to support the prevention and management of diabetes, including:

- Foot care programs including regular examination and patient education could prevent up to 85% of diabetes-related amputations and save up to $1,200 in health care costs for a diabetic with previous foot ulcers or amputation.

- Blood pressure control reduces the risk of heart disease and stroke by 33% to 50% and can cut health care costs by $1,200 over the lifetime of a type 2 diabetic.

- Lifestyle changes by pre-diabetics, such as a 7% weight loss or increased physical activity, can reduce the onset of type 2 diabetes by 58% during a three-year period.

Medication adherence is a key factor in treating people with diabetes to ensure blood sugar levels are maintained and complications do not arise or progress. Adherence to diabetes medication is an important component to managing the disease and costs.
The *Journal of Occupational and Environmental Medicine* published a report addressing copay costs and medication adherence. The report’s objective was to “assess the effects of diabetes-related health plan copays on adherence to oral diabetes medication and to estimate the effect of diabetes medication adherence on subsequent health resource utilization and expenditure.” The results show that high copayments were associated with lower adherence to oral diabetes medication and higher total health care costs. Individuals with copayments of $20 or more were four times more likely to discontinue medication than those with copays of $10 or less. The higher copays also were associated with increased emergency room visits and the number of days receiving inpatient care.

Another potential way to manage diabetes and its costs is through increased investments in disease prevention efforts. Trust for America’s Health, a health advocacy organization, published a report that examines the potential health care savings of increased disease prevention investments. Disease prevention investments can be achieved by finding community-based programs that successfully include physical activity, improve nutrition, and reduce smoking rates—all of which ultimately keep people healthy. The report suggests that prevention efforts that reduce specific disease rates could potentially save $21 billion in health care costs. The potential cost savings include:

- Reducing type 2 diabetes and high blood pressure by 5%, which could save $5 billion;
- Reducing heart disease, kidney disease, and stroke by 5%, which could save $14 billion; and
- Reducing some forms of cancer, chronic obstructive pulmonary disease (COPD), and arthritis by 2.5%, which could save $2 billion.

**Employer Trends**

According to Hewitt’s survey report, *Challenges for Health Care in Uncertain Times 2009*, three-fourths of survey respondents indicated they are targeting diabetes in their employee population. Employers identified keeping employees healthy as a top business and workforce issue. In 2008, Hewitt surveyed 248 benefit managers to examine tactics employers are taking to manage their benefits. The report, *The Road Ahead: Driving Productivity by Investing in Health 2008*, found that employers are interested in engaging their populations with actions and strategies that ultimately improve the health of their employees and positively affect productivity. Employers want to increase employee accountability, reduce health risks, tailor health risk management programs to employee risk levels, utilize data and measurement tools, and integrate managed benefits and programs. Employers identified wellness and coaching integrated with chronic disease programming as a primary health and productivity strategy. The top three strategic priorities identified by employers for the next two to five years are:

- Assessing effectiveness of wellness, health improvement, and chronic disease programs;
- Promoting employee assistance programs and work-life benefits; and
- Reviewing absence management strategy, design, and administration.

**Health Plan Trends**

Health plans are introducing programs and services to promote the health of their insured populations. In January 2009, the National Business Coalition on Health published its “2008 Health Plan Diabetes Care Performance” report, which highlights the results of its annual request for information (RFI). The RFI gathers information from health plans and captures their standard program offerings and the innovations they use to reduce the onset of diabetes and provide help to people with diabetes. Overall, the report found

---


health plans are addressing the need for health promotion services. Plans are offering benefit designs and health promotion and wellness programs that encourage people with diabetes to manage their disease.

For example, plans are looking to direct people with diabetes to high performing providers through benefit designs that include coinsurance and deductibles. Plans are using pharmacy data to identify gaps in medication adherence and sending reminders to participants highlighting the importance of using their prescribed drugs. More details on how three health plans’ programs and services are targeting participants with diabetes (and other chronic diseases) are provided below.

**UnitedHealth Group’s Diabetes Health Plan**
The Diabetes Health Plan was developed by UnitedHealth Group to help diabetics manage their condition. The overall objective “is to slow the progression of the disease for people with diabetes, and in as many cases as possible to reverse the condition for people in the pre-diabetes stages.” The Diabetes Health Plan is currently in a pilot stage in all 50 states. The plan’s benefits include diabetes-related supplies and prescription drugs at no charge and low copayments for related doctor visits. The plan offers diabetics incentives to manage their condition through the use of tools including prevention guidelines and a data tracking Web site.

**Aetna Health Connections**
Instead of focusing broadly on specific diseases, Aetna’s disease management program, Aetna Health Connections, is tailored to address an individual’s health condition(s). The program’s outreach and intervention strategies are customized for each individual to gauge his or her readiness to change and identify his or her concerns. To ensure that an individual’s specific concerns are addressed, the program is then developed using his or her health information, benefit plan coverage, and personal preferences.

**Anthem Blue Cross Blue Shield’s 360 Degree Health**
Anthem Blue Cross Blue Shield provides a program, 360 Degree Health, that offers an integrated health strategy focused on its members’ health needs. The program offers various services including ConditionCare, which helps members manage chronic diseases such as diabetes. ConditionCare provides access to online wellness and lifestyle programs; discounts on health-related products; and access to physicians, nurses, and dietitians.
The risk of diabetes varies within each employee population. For more information on how to develop an effective diabetes program for your workforce, please contact your local Hewitt Consultant. The following organizations also may be helpful.

**External Resources**

**American Diabetes Association**
The mission of the American Diabetes Association (ADA) is to prevent and cure diabetes and to improve the lives of all people affected by diabetes. The ADA funds research to prevent, cure, and manage diabetes; delivers services to hundreds of communities; provides objective and credible information; and gives voice to those denied their rights because of diabetes.  
http://www.diabetes.org

**Centers for Disease Control and Prevention**
The Centers for Disease Control and Prevention is one of the major operating components of the U.S. Department of Health and Human Services and has a mission of collaborating to create the expertise, information, and tools that people and communities need to protect their health—through health promotion, prevention of disease, injury and disability, and preparedness for new health threats.  
http://www.cdc.gov/diabetes

**DiabetesAmerica**
The DiabetesAmerica health centers provide comprehensive care tailored to the needs of diabetics. The centers help diabetes patients understand their condition and manage the disease. The four cornerstones of DiabetesAmerica include diabetes medical care, personalized diabetes education, nutrition counseling, and lifestyle and exercise coaching.  
http://www.diabetesamerica.com/

**National Institute of Diabetes and Digestive and Kidney Diseases**
The National Institute of Diabetes and Digestive and Kidney Diseases conducts and supports basic and clinical research on many of the most serious diseases affecting public health.  
http://www2.niddk.nih.gov

**National Changing Diabetes Program**
National Changing Diabetes Program brings together innovators in diabetes education, treatment, reimbursement, and policy to shift attitudes and change the way patients and health care professionals think about diabetes.  
http://www.ncdp.com

**Hewitt Resources**

**Challenges for Health Care in Uncertain Times 2009**
For more than two decades, Hewitt Associates’ health care survey has tracked employer health care practices, benefit programs, and efforts to provide and manage workforce health benefits. This report, *Challenges for Health Care in Uncertain Times 2009*, highlights employer-sponsored health care programs and other benefits including short- and long-term cost trends, strategy, and design features. In addition, it covers employers’ practices, views, and perspectives regarding managing health care costs, improving workforce health and productivity, and cost prevention—allowing us to identify trends, critical business issues, and opportunities as they develop.
The Road Ahead: Driving Productivity by Investing in Health 2008
Hewitt’s survey The Road Ahead: Driving Productivity by Investing in Health 2008, collected information about the health and productivity actions organizations are taking or are interested in taking in health and clinical programs; pharmacy, behavioral health; absence management; and vendor performance assessment. Nearly 250 organizations participated in the survey, representing programs affecting nearly 4.4 million employees. The survey report presents current health and productivity trends and likely employer strategies for the next two to five years.

Trends in Federal and State Diabetes Legislation
Diabetes has reached epidemic proportions in the U.S. and continues to affect an increasing number of people every year. Hewitt takes a look at the latest state and federal legislation, along with ways employers can address diabetes-related health care costs.

Trends in Prosthetic Parity
This Hewitt trends bulletin provides a snapshot of state and federal trends in prosthetic parity, which generally mandates that group health plans either offer or provide coverage for prosthetic devices and services at the same levels as medical and surgical benefits.

DIAGNOSIS: DIABETES Assessment
Hewitt’s DIAGNOSIS: DIABETES assessment is a unique approach that can help your company identify ways to improve health outcomes and generate financial savings for the diabetic and pre-diabetic populations.