

# RESEARCH IN ACTION

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## The High Concentration of U.S. Health Care Expenditures

### Introduction

As policymakers consider various ways to contain the rising costs of health care, it is useful to examine the patterns of spending on health care throughout the United States. In 2004, the United States spent \$1.9 trillion, or 16 percent of its gross domestic product (GDP), on health care. This averages out to about \$6,280 for each man, woman, and child.

However, actual spending is distributed unevenly across individuals, different segments of the population, specific diseases, and payers. For example, analysis of health care spending shows that:

- Five percent of the population accounts for almost half (49 percent) of total health care expenses.
- The 15 most expensive health conditions account for 44 percent of total health care expenses.
- Patients with multiple chronic conditions cost up to seven times as much as patients with only one chronic condition.

Further detailed analyses of these spending patterns, how they change over time, and how they affect different payers such as Medicare, Medicaid, private insurers, employers, and consumers shed important light on how to best target efforts to contain rapidly rising health care costs.

Much of the information included in this report comes from the Medical Expenditure Panel Survey. (See Box 1.)

### Background

Health care expenses in the United States rose from \$1,106 per person in 1980 (\$255 billion overall) to \$6,280 per person in 2004 (\$1.9 trillion overall).<sup>1</sup> During this period, health care costs grew faster than the economy as a whole. As a consequence, health spending now accounts for 16 percent of the GDP, compared to 9 percent in 1980. With the aging of the population and the accelerating pace of medical innovation, this trend is likely to continue.

Those struggling to develop strategies to reduce or contain costs consider whether efforts should be targeted broadly across the entire health care system or more narrowly at specific areas or aspects of care. For example, is the continuing rise in health care expenses due to the increased

### Making a Difference

- In 2002, the 5 percent of people with the greatest health care expenses in the U.S. population spent 49 percent of the overall health care dollar...Page 2
- The lower 50 percent of spenders accounted for 3 percent of the total national health care dollar...Page 2
- The proportion of spenders who remained among the top 1% of spenders for two years in a row doubled between 1996-97 and 2002-03 ...Page 5
- The five most expensive health conditions are heart disease, cancer, trauma, mental disorders, and pulmonary disorders...Page 6

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### Box 1. The Medical Expenditure Panel Survey (MEPS)

The Medical Expenditure Panel Survey (MEPS) is a large, ongoing nationally representative survey of households, medical providers, and employers conducted by the Agency for Healthcare Research and Quality (AHRQ). Data derived from MEPS and analyzed by AHRQ-funded and other researchers show where health care expenses are concentrated and how this distribution has changed over time. The distribution of medical expenses is determined by ranking individuals in descending order according to their total medical expenses and then determining aggregate spending at specific percentiles of the population.

MEPS is unique in its ability to link data on individuals and households (including demographics, health status, health conditions, health insurance, employment, and income) to detailed information on their use of and expenses for health care. MEPS interviewers ask households for detailed information about each health care visit, hospital stay, prescription drug fill, and other medical services, including out-of-pocket expenses and sources of payment. Followback surveys of the hospitals, physicians, and home health agencies used by MEPS households provide further information about payments made by Medicaid, Medicare, private health plans, and other sources. MEPS has been continuously conducted since 1996, and its design makes it possible to examine how health care use, expenses, sources of payment, and insurance coverage change over time. No other survey contains such a wide range of data essential for relating health spending and insurance coverage to individual and family characteristics such as age, race and ethnicity, health conditions and health status, and family income.

MEPS estimates of health care expenses differ from the aggregate spending estimates contained in the National Health Accounts (NHA), primarily because MEPS covers the civilian noninstitutionalized population and excludes some populations with high expenses such as people residing in nursing homes.

cost of treatment per case? To the growth and aging of the population? To the rise in the number of people treated for the most expensive conditions?

Examining the distribution of health care expenses among the U.S. population helps to determine the expenses for different segments of the population, what diseases cost the most, and how public and private payers are affected. This information sheds light on areas where changes in policy might bring about the greatest savings.

### How are U.S. health care expenses distributed?

#### A small proportion of the total population accounts for half of all U.S. medical spending

Half of the population spends little or nothing on health care, while 5 percent of the population spends almost half of the total amount.<sup>2</sup> In 2002, the 5 percent of the U.S. community (civilian noninstitutionalized) population that spent the most on health care accounted for 49 percent of overall U.S. health care spending (Chart 1). Among this group, annual medical expenses (exclusive of health insurance premiums) equaled or exceeded \$11,487 per person. In contrast, the 50 percent of the population with the lowest expenses accounted for only 3 percent of overall U.S. medical spending, with annual medical spending below \$664 per person. Thus, those in the top 5 percent spent, on average, more than 17 times as much per person as those in the bottom 50 percent of spenders.<sup>2</sup>

From 1977 to 1996, the overall distribution of health care expenses among the U.S. population remained remarkably stable (Table 1), according to data from MEPS and its predecessor surveys.<sup>3,4</sup> In 1977, the 1 percent of the population with the highest expenses accounted for 27 percent of all expenses, the top 5 percent accounted for 55 percent, and the bottom 50 percent accounted for 3 percent. However, the concentration of expenses at the top has decreased in recent years. The total expenses accounted for by the top 1 percent of spenders declined from 28 percent in 1996 to 22 percent in 2002, and the amount for the top 5 percent dropped from 55 to 49 percent in the same time period.<sup>4</sup> The lower 50 percent of spenders remained at 3 to 4 percent of total expenditures during this period.

**Chart 1. Percent of total health care expenses incurred by different percentiles of U.S. population: 2002**



**Source:** Conwell LJ, Cohen JW. Characteristics of people with high medical expenses in the U.S. civilian noninstitutionalized population, 2002. Statistical Brief #73. March 2005. Agency for Healthcare Research and Quality, Rockville, MD. Web site: <http://www.meps.ahrq.gov/PrintProducts/PrintProdLookup.asp?ProductType=StatisticalBrief>. Accessed April 7, 2006.

**Note:** Figures in parentheses are expenses per person.

**Table 1. Distribution of health care expenses for the U.S. population, by percent of total: Selected years, 1977-2002**

Percent of U.S. population ranked by expenses	1977	1980	1987	1996	2002
Top 1 percent	27%	29%	28%	28%	22%
Top 5 percent	55%	55%	56%	56%	49%
Bottom 50 percent	3%	4%	3%	3%	3%

**Sources:** Berk ML, Monheit AC. The concentration of health expenditures: an update. Health Aff (Millwood) 1992 Winter; 145-9. Yu WW, Ezzati-Rice TM. Concentration of health care expenses in the U.S. civilian noninstitutionalized population. Statistical Brief #81. May 2005. Agency for Healthcare Research and Quality, Rockville, MD Web site: <http://www.meps.ahrq.gov/PrintProducts/PrintProdLookup.asp?ProductType=StatisticalBrief>. Accessed April 7, 2006.

### Older people are much more likely to be among the top-spending percentiles

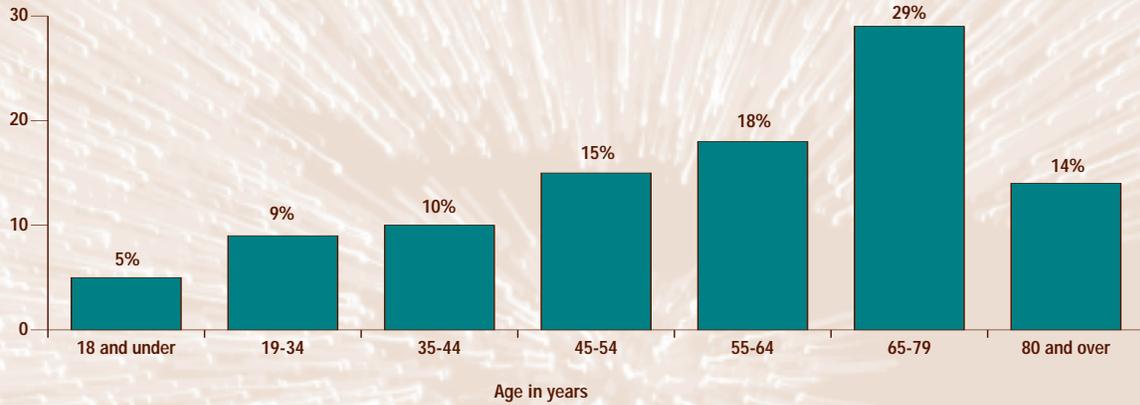
The elderly (age 65 and over) made up around 13 percent of the U.S. population in 2002, but they consumed 36 percent of total U.S. personal health care expenses. The average health care expense in 2002 was \$11,089 per year for elderly people but only \$3,352 per year for working-age people (ages 19-64).<sup>5</sup> Similar differences among age

groups are reflected in the data on the top 5 percent of health care spenders. People 65-79 (9 percent of the total population) represented 29 percent of the top 5 percent of spenders. Similarly, people 80 years and older (about 3 percent of the population) accounted for 14 percent of the top 5 percent of spenders (Chart 2).<sup>2</sup> However, within age groups, spending is less concentrated among those age 65 and over than for the under-65 population. The top 5 percent of elderly spenders accounted for 34 percent of all expenses by the elderly in 2002, while the top 5 percent of non-elderly spenders accounted for 49 percent of expenses by the non-elderly.<sup>4</sup> A principal reason why health care spending is spread out more evenly among the elderly is that a much higher proportion of the elderly than the non-elderly have expensive chronic conditions.

### Studies show initial persistence of expenses

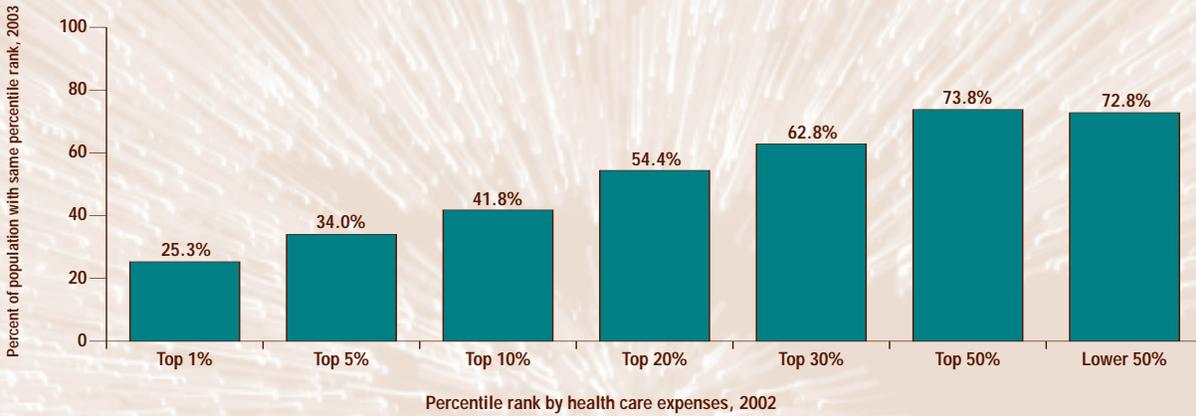
The data just cited show that health care expenses are heavily concentrated in a single year. Over a 2-year period, there is a fairly high degree of persistence of expenditures.<sup>6</sup> Of those individuals ranked at the top 1 percent of the health care expenditure distribution in 2002, 25 percent maintained this ranking with respect to their 2003 health care expenditures (Chart 3). The proportion of the population that remained in the top 1 percent from 1996 to

**Chart 2. Percent of health care expenses incurred by the top 5 percent of health care spenders within different age groups: United States, 2002**



Source: Conwell LJ, Cohen JW. Characteristics of people with high medical expenses in the U.S. civilian noninstitutionalized population, 2002. Statistical Brief #73. March 2005. Agency for Healthcare Research and Quality, Rockville, MD. Web site: <http://www.meps.ahrq.gov/PrintProducts/PrintProdLookup.asp?ProductType=StatisticalBrief>. Accessed April 7, 2006.

**Chart 3. Persistence in the level of health care expenses: United States, 2002-03**



Source: Cohen SC, Yu W. The persistence in the level of health care expenditures over time: estimates for the U.S. population, 2002-2003. Statistical Brief #124. May 2006. Agency for Healthcare Research and Quality, Rockville, MD. Web site: <http://www.meps.ahrq.gov/PrintProducts/PrintProdLookup.asp?ProductType=StatisticalBrief>. Accessed May 15, 2006.

1997 was only 14 percent. This means that the proportion of the population in the highest percentile of the health care expenditure distribution that retained this ranking from 2002 to 2003 was nearly double the proportion in the 1996-97 period.<sup>7</sup>

In 2002, the top 5 percent of the population accounted for 49 percent of health care expenditures. Of people ranked in the top 5 percent of the health care expenditure distribution, 34 percent retained this ranking with respect to their 2003 health care expenditures. Similarly, the top 10 percent of the population accounted for 64 percent of overall health care expenditures in 2002, and 42 percent of this subgroup retained the top decile ranking with respect to their 2003 health care expenditures.

Over longer periods of time, a considerable leveling of expenses takes place. In a study of Medicare enrollees, researchers found that although the top 1 percent of spenders accounted for 20 percent of expenses in a particular year, the top 1 percent of spenders over a 16-year period accounted for only 7 percent of expenses.<sup>8</sup> The researchers concluded that there is a substantial leveling of expenses across a population when looking over several years or more compared to just a single year. An acute episode of pneumonia or a motor vehicle accident might lead to an expensive hospitalization for an otherwise healthy person, who might be in the top 1 percent for just that year but have few expenses in subsequent years. Similarly, many people have chronic conditions, such as diabetes and asthma, which are fairly expensive to treat on an ongoing basis for the rest of their lives, but in most years will not put them at the very top of health care spenders. However, each year some of those with chronic conditions will have acute episodes or complications requiring a hospitalization or other more expensive treatment.

The Medicare study just discussed<sup>8</sup> did not control for factors such as the overall increase in the quantity and intensity of services over time. Another study controlled for these factors in examining how the distribution of expenses changes over the major phases of an average person's lifetime.<sup>9</sup> The study used insurance company data on 3.75 million enrollees and data from the Medicare Current Beneficiary Survey.<sup>a</sup> It found that 8 percent of health care expenses occurred during childhood (under age

<sup>a</sup> This study used cross-sectional data from 1997 and held constant factors such as health care technology and price, and the incidence, severity, and outcomes of disease.

20), 13 percent during young adulthood (20-39 years), 31 percent during middle age (40-64 years), and nearly half (49 percent) occurred after 65 years of age. Among people age 65 and older, three-quarters of expenses (or 37 percent of the lifetime total) occurred among individuals 65-84 and the rest (12 percent of the lifetime total) among people 85 and over. The total per capita lifetime expense was calculated to be \$316,600.

### **People with high overall health expenses also have high out-of-pocket expenses relative to income**

Out-of-pocket costs can impose a significant financial burden on individuals and families. These expenses include deductibles, copayments, and payments for services that are not covered by health insurance. Over half the people in the top 5 percent of all health care spenders had out-of-pocket expenses (not including out-of-pocket health insurance premiums) over 10 percent of family income. More specifically:

- Thirty-four percent had out-of-pocket medical expenses that exceeded 10 percent of family income.
- Eighteen percent had out-of-pocket expenses in excess of 20 percent of family income.

People in the bottom 50 percent of the distribution were much less likely to have financial burdens from medical care. For example:

- Five percent of people in the bottom 50 percent had out-of-pocket expenses that exceeded 10 percent of family income.
- Three percent had out-of-pocket expenses greater than 20 percent of family income.<sup>2</sup>

### **People with high health care expenses have lower health status**

How people view their own health is strongly correlated with their level of health care expenses. Using a respondent-reported overall health status measure (ranging from poor to excellent), a study based on MEPS 2002 data found that people in the highest 5 percent of the distribution of medical expenses were 11 times as likely to be in fair or poor physical health as people in the bottom half of that distribution (45 percent vs. 4 percent).<sup>b</sup> Similarly, 21 percent of people in the top 5 percent were in

<sup>b</sup> MEPS respondents were asked to rate the health of each person in the family by the following categories: excellent, very good, good, fair, and poor.

fair or poor mental health, compared with 3 percent of people in the bottom 50 percent.<sup>2</sup>

### Managed care has a neutral effect on the concentration of health care expenses

The rapid growth of health maintenance organizations (HMOs) and other forms of managed care from the 1970s onward as a means to control costs led to major changes in the delivery of health care in the United States. But did managed care change the concentration of health care expenses? According to a study using 1996 MEPS data, the answer is no.<sup>10</sup> Looking at the under-65 population with employer-provided health insurance, researchers found no statistically significant differences in concentration between those enrolled in HMOs and other types of gatekeeper plans and those enrolled in indemnity or preferred provider organizations (PPOs). For example, the top 5 percent of spenders accounted for 51 percent of expenses for those enrolled in HMOs, compared with 50 percent of expenses for those in HMOs and other “gatekeeper” managed care combined and 53 percent of expenses for those in indemnity plans and some PPOs.<sup>c</sup>

<sup>c</sup>The PPOs included were those that billed on a fee-for-service basis.

### Despite relatively similar distributions, the privately insured spend much more than the uninsured

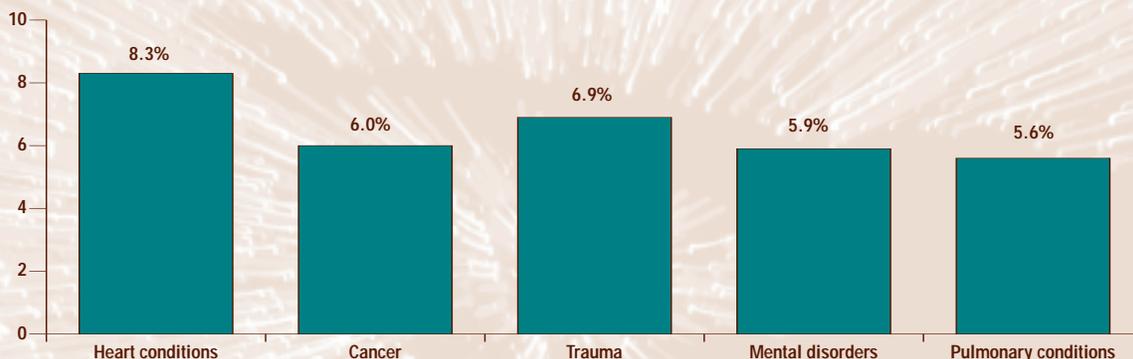
In relative terms, health care expenses are distributed comparably among the uninsured and those with private insurance. For example, in 1996, the top 5 percent of spenders accounted for 51 percent of all expenses among those with private insurance and 60 percent of spending by the uninsured. However, the top 5 percent with private insurance spent an average of \$17,800, compared to \$6,700 for the top 5 percent of the uninsured.<sup>10</sup>

### What are the most expensive conditions?

#### Some diseases are very costly to treat

In 2002, the five most expensive health conditions were heart disease, cancer, trauma, mental disorders, and pulmonary conditions (Chart 4). Heart disease and trauma ranked first and second as the two most expensive conditions in terms of total health care spending; however, with respect to per-person costs, cancer was the most expensive and heart disease the second most expensive.<sup>11</sup> Taken together, these five conditions accounted for a substantial proportion of total health expenditures in 2002.

Chart 4. The five most costly conditions as a percentage of total health expenditures: United States, 2002



Source: Olin GL, Rhoades JA. The five most costly medical conditions, 1997 and 2002: estimates for the U.S. civilian noninstitutionalized population. Statistical Brief #80. Agency for Healthcare Research and Quality, Rockville, MD. Web site: <http://www.meps.ahrq.gov/PrintProducts/PrintProdLookup.asp?ProductType=StatisticalBrief>. Accessed April 7, 2006.

The 15 most costly medical conditions in the United States accounted for 44 percent of total U.S. health care spending in 1996.<sup>12</sup>

### **Chronic conditions contribute to higher health care costs**

Twenty-five percent of the U.S. community population were reported to have one or more of five major chronic conditions: mood disorders, diabetes, heart disease, asthma, and hypertension. Spending to treat these five conditions alone amounted to \$62.3 billion in 1996.<sup>13</sup> Moreover, people with chronic conditions tend to have other conditions and illnesses.

When the other illnesses are added in, total expenses for people with these five major chronic conditions rise to \$270 billion, or 49 percent of total health care costs, according to 1996 MEPS data. On an individual level, treatment for the average patient with asthma was \$663 per year in 1996, but when the full cost of care for asthma and other coexistent illnesses is taken into account, the average cost was \$2,779. Expenses for people with one chronic condition were twice as great as for those without any chronic conditions. Spending for those with five or more chronic conditions was about 14 times greater than spending for those without any chronic conditions.<sup>14</sup> Persons with five or more conditions also have high hospital expenditures. In New York State during 2002, of the 1.3 million different persons admitted to the hospital, the 27 percent with five or more chronic conditions accounted for 47 percent of all inpatient costs.<sup>15</sup>

### **Expensive conditions contribute to the growth in health care costs**

One study found that a small number of conditions accounted for most of the growth in total health care spending between 1987 and 2000—with the top five medical conditions (heart disease, pulmonary disorders, mental disorders, cancer, and trauma) accounting for 31 percent.<sup>16</sup> For 7 of the top 15 conditions, a rise in the proportion of the U.S. population being treated, rather than rising treatment costs per case or population growth, accounted for the greatest part of the spending growth.<sup>d</sup>

<sup>d</sup> This is also referred to as “treated prevalence,” or the proportion of the population currently receiving care for that condition.

### **How much does the rise in number of people being treated explain the overall growth in private insurance spending?**

The rise in the number of people being treated for expensive conditions has had an impact on the growth in private insurance spending similar to that on overall health care spending. The rise in the number of people being treated, rather than the rise in spending per treated case, was the most important determinant of the growth in private insurance spending between 1987 and 2002, according to a recent study.<sup>17</sup> For 16 of the 20 most expensive conditions, the rise in the number of people being treated accounted for more than half the growth in private insurance health care spending. Researchers attribute the additional numbers of people being treated to three factors: (1) the continued rise in the share of privately insured adults classified as obese, (2) changes in clinical treatment guidelines and standards for treating patients without symptoms or with mild symptoms only, and (3) the availability of new medical technologies to diagnose and treat patients.

Especially important is the increase in the number of people treated for conditions clinically linked to obesity. From 1987 to 2002, the proportion of the population treated increased 64 percent for diabetes (accounting for 80 percent of the increase in costs) and increased 500 percent for hyperlipidemia (accounting for almost 90 percent of the increase in costs). A number of factors might explain the substantial increase in treatment rates for conditions linked to obesity. These factors include a rise in the number of people with obesity-related conditions, a rise in the number of more seriously ill patients, a greater emphasis on preventive care, and the introduction of broader treatment options.

### **The cost of public programs is affected by highly expensive conditions**

#### **Medicare**

In 2001, 5 percent of Medicare fee-for-service beneficiaries accounted for 43 percent of total spending, with 25 percent accounting for 85 percent of all spending. Chronic

conditions were closely linked to high expenditure levels: more than 75 percent of high-cost beneficiaries (the 25 percent of Medicare beneficiaries with the highest costs) had one or more of seven major chronic conditions.<sup>18</sup> The top-spending 25 percent of Medicare beneficiaries incurred average per-person costs of \$24,800. In this group, 42 percent had coronary artery disease, 30 percent had congestive heart failure, and 30 percent had diabetes.

## Medicaid

The elderly and disabled, who constituted around 25 percent of the Medicaid population, accounted for about 70 percent of Medicaid spending on services in 2003. People with disabilities accounted for 43 percent of Medicaid spending and the elderly for 26 percent.<sup>19</sup> The remaining 75 percent of the Medicaid population, who were not elderly or disabled, accounted for only 30 percent of spending.

## Geographic variation in health care expenses

Studies point to major differences in health care expenses by geographic area. One study, which divided the country into 306 hospital referral regions, or regional markets for health care, found that patients in the higher spending areas receive 60 percent more care.<sup>20</sup> For example, in 1996, Medicare fee-for-service patients had average expenses of \$8,414 in the Miami, Florida, region, and \$3,341 in the Minneapolis, Minnesota, region. The authors found that these differences were due not to differences in prices, average levels of illness, or socioeconomic status but rather to the overall quantity of medical services provided and to the relatively higher proportions of internists and medical subspecialists in high-cost regions.

## Conclusions

Analyses of health care spending patterns shed important light on how best to focus efforts to help restrain rising health care costs. Recognition that a relatively small group of individuals account for a large fraction of spending in Medicare, Medicaid, private plans, and the population as a whole serves to inform more focused cost-containment strategies. The concentration of health care expenses also has implications for the effective design of consumer directed health plans. Research also continues to raise awareness of the importance of chronic conditions in overall spending and as a major driver of cost increases,

leading to disease management programs and other efforts to both improve quality and reduce the costs of conditions such as diabetes, asthma, hypertension, heart disease, and obesity.

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