

## Diabetes: The Impact of Multiple Chronic Conditions

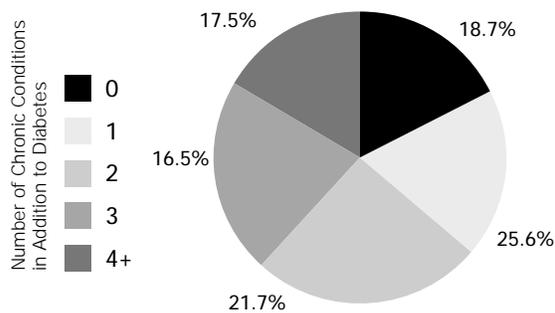
Diabetes is a chronic condition affecting 16 million Americans.<sup>iii</sup> Most people with diabetes also have other serious health conditions, or co-morbidities, that complicate their care, treatment, and outcomes as illustrated by the data below.

### Most People With Diabetes Have Multiple Chronic Conditions

Over 81 percent of people with diabetes have one or more additional chronic conditions (see Figure 1).

**Figure 1**

*Percent of People with Diabetes and Other Chronic Conditions*



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 1996.

The most common chronic health conditions that afflict people with diabetes are:

Conditions	Percent of Diabetes Patients Affected
Cardiovascular Diseases (Including Hypertension)	57.2%
Arthritis	21.4%
Eye Disorders (Including Glaucoma)	19.9%
Mental Illness	13.5%

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 1996.

### Hospital Use Increases With More Chronic Conditions

Many people with diabetes have ambulatory care sensitive conditions (ACSCs). ACSCs are conditions in which the risk of hospitalization can be reduced with adequate primary care that can either prevent the onset of the condition or effectively manage a chronic condition.

Patients with ACSCs who receive adequate, coordinated primary care experience fewer health problems and are hospitalized less often.

Admission to the hospital for treatment of an ACSC indicates poor access to appropriate quality care. Co-morbidities increase the complexities of patient care, thus increasing the occurrence of ACSCs and complications. As the data below show, having multiple chronic conditions significantly increases the risk of hospitalization to treat an ACSC.

Number of Chronic Conditions in Addition to Diabetes	Hospitalizations for ACSC Admissions per 1,000 Patients Over Age 65
0	4.5
1	19.9
2	39.9
3	72.5
4	110.7
5+	230.8

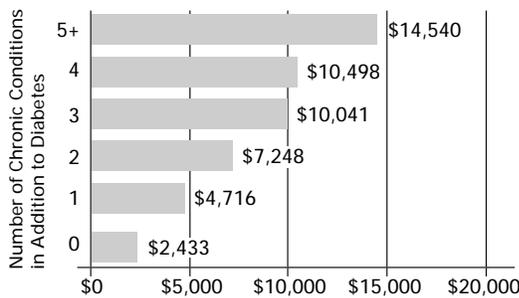
Source: Medicare Standard Analytic File, 1999.

### Health Care Spending Increases With More Chronic Conditions

Co-morbidities in people with diabetes greatly increase health care expenses, which in Figure 2 include all spending for inpatient and outpatient care. As Figure 2 shows, having just one additional condition almost doubles expenses, and having three co-morbidities more than triples annual per capita expenditures.

**Figure 2**

Average Annual Per Capita Health Care Expenses



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 1996

Certain chronic conditions are more common than others among people with diabetes. The combination of these conditions (and sometimes additional health concerns) can greatly increase treatment costs, as shown below.

Conditions	Per Capita Health Care Expenses
Diabetes & Eye Disorder	\$6,987
Diabetes, Eye Disorder & Arthritis	\$15,501

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 1996.

### Utilization Increases With More Chronic Conditions

People with diabetes and other chronic conditions use more health care services. For example, people with diabetes who have other chronic conditions tend to visit physicians more often (see Figure 3).

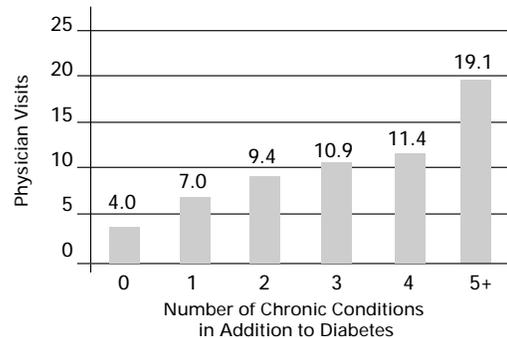
Increased use of health care services and medications has substantial implications for coordination of care and patient outcomes. Different drug and treatment regimens can result in harmful interactions if not well managed and coordinated.

### Conclusion

As the population with diabetes and other chronic conditions continues to grow, we need to recognize that co-morbidities create extra challenges for patients, their families, and their health care providers. To respond to these challenges, those who are looking to improve the health care system may want to consider:

**Figure 3**

Average Annual Number of Physician Visits



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 1996.

- Re-organizing delivery and financing systems,
- Improving access to high-quality, affordable health care services, and
- Enhancing care coordination among multiple formal and informal providers.

A growing body of research suggests that patients have better outcomes at lower cost when care is coordinated. While we are seeing the benefits of specific disease management efforts, it is important to look more broadly to modify systems of care and financing to address the needs of people with diabetes who have multiple chronic conditions.

### About Partnership for Solutions

Partnership for Solutions, led by Johns Hopkins University and The Robert Wood Johnson Foundation, is an initiative to improve the care and quality of life for the estimated 125 million Americans with chronic health conditions. The Partnership is engaged in three major activities: conducting original research and identifying existing research that clarifies the nature of the problem; communicating these research findings to policymakers, business leaders, health professionals, advocates, and others; and working with public and private programs to identify promising solutions to the problems faced by people with chronic conditions.

i Diabetes includes all diabetes types I and II, with or without complications, as defined in the Agency for Healthcare Research and Quality's Medical Expenditure Panel Survey, 1996.

ii Prevalence data from the American Diabetes Association, 2001.