



The Novo Nordisk Diabetes Barometer

Promising research to change diabetes

Commissioned by Novo Nordisk through its Changing Diabetes® leadership initiative.

April 2010

From Research to Action We Are Changing Diabetes

Novo Nordisk has a simple mission: to change diabetes and improve the lives of people affected by the disease. To do this, we must create change in the health care system to better support diabetes prevention, diagnosis and care.

Diabetes is a multi-faceted disease. It affects not only our health, but the health of our economy and our society. To understand and address all of the factors that contribute to the diabetes crisis in this country, and the factors that can contribute to the reversal of that crisis, we must first look at the whole picture. What does it mean to our national economy that nearly 24 million Americans suffer from diabetes?¹ Do the estimated 57 million Americans with prediabetes understand that lifestyle interventions can slow the advancement of the disease?² Are we measuring the quality of diabetes care so that it is delivered effectively?

The Novo Nordisk Diabetes Barometer was developed to examine the current state of diabetes and prediabetes in America from three interconnected areas — societal, economic and clinical. By looking at diabetes in a holistic way, the nation can take another important step toward changing diabetes®.

The Novo Nordisk Diabetes Barometer is the first comprehensive national benchmark against which we can measure the public's understanding of diabetes, the economic impact it has in the nation and gaps in diabetes measurement. It also provides momentum to inform future strategies against diabetes. This depth of understanding is an important step for our country in the ongoing efforts to find a comprehensive solution to the consequences of diabetes and prediabetes in this country.

An overview of each barometer follows:

Societal Barometer: A National Survey on Public Knowledge, Perceptions and Behaviors Regarding Diabetes and Diabetes Prevention

Overview

While awareness of diabetes exists, people are not yet taking the necessary actions to prevent it. The Societal Barometer provides a closer look at the public's attitudes and behaviors around diabetes. Do we view this as a serious disease? Do we know the risk factors for diabetes? Do we feel that diabetes directly impacts our lives?

Conducted by Gallup^{®3}, this national public opinion survey of 2,015 adults provides insight into the steps necessary to move diabetes awareness into action. It measures public perceptions and attitudes surrounding diabetes in the United States in the following areas:

- Knowledge of the seriousness of diabetes as compared with other chronic diseases;
- Knowledge of diabetes risk factors;
- Perceptions of personal and family diabetes risk and actions to reduce risk;
- Attitudes about diabetes prevention and self-care; and
- Attitudes toward public policy regarding diabetes prevention and treatment.

Key Findings

An overwhelming majority of Americans believe diabetes is a serious national health issue.



94% consider diabetes to be a **serious national health issue**



71% consider diabetes to be as or more **serious than heart disease**



69% consider diabetes to be as or more **serious than a stroke**



24% either **diagnosed by a physician** as having diabetes or as being at-risk of diabetes

Source: Gallup. Diabetes in America: Public Knowledge, Perceptions and Behavior Regarding Diabetes and Diabetes Prevention. 2008.

- A large majority of the public says there are things a person can do to prevent diabetes and its complications — however, there is a lack of specific knowledge about the preventative benefits healthy eating and physical activity can have on weight, a recognized risk factor for diabetes.

The good news is that efforts to raise awareness of diabetes have been largely successful. Survey respondents generally understand what diabetes is and who it impacts. There is also clear support for public policies to improve diabetes prevention and treatment. However, there is still much work to be done to move the public from awareness to action to prevent diabetes and its complications.

Economic Barometer: Diabetes and Prediabetes Cost the U.S. an Estimated \$218 Billion

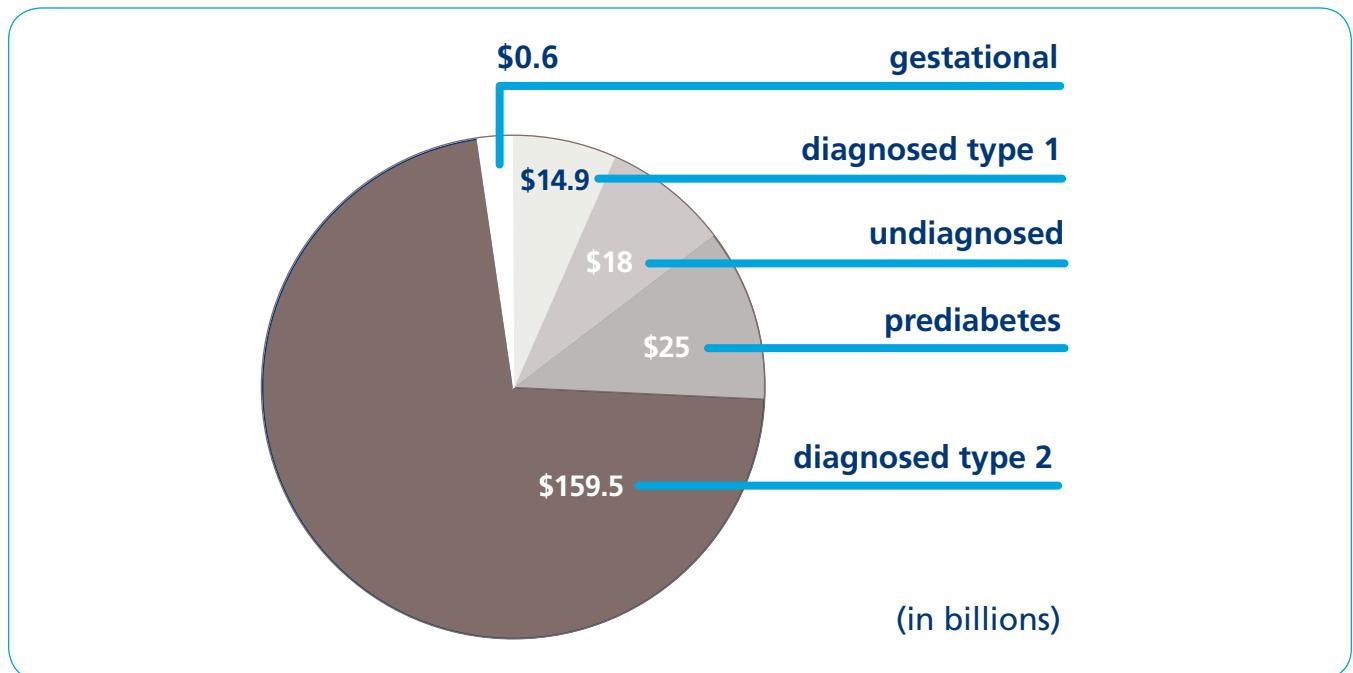
Overview

When diabetes leaders, policymakers and others in the health care community discuss the economic impact of diabetes on the United States, the most often cited cost estimate is \$174 billion⁴ — which represents the direct and indirect costs of diagnosed type 1 and type 2 diabetes. This figure comes from important and respected research conducted by the Lewin Group for the American Diabetes Association (ADA) in 2007.

The ADA research focuses on the economics of the estimated 18 million Americans with diagnosed diabetes. What has not been looked at until now are the costs of those who are undiagnosed, have gestational diabetes and are one of the estimated 57 million with prediabetes. With encouragement from the ADA, Novo Nordisk engaged the Lewin Group to build upon their study and provide a more thorough assessment of the annual cost of diabetes by expanding their current economic research model to include undiagnosed, gestational and prediabetes. The Economic Barometer is the first research of its kind to look at the comprehensive cost of diabetes and prediabetes in the U.S.

Key Findings

The Economic Barometer research found that the U.S. spent nearly \$218 billion on diabetes and prediabetes in 2007.⁵ The study shows the following breakdown of diabetes costs in 2007:



Source: Dall, T.M., Zhang, Y, Chen, Y. et al. The Economic Burden Of Diabetes. *Health Affairs*. 29, (2) 2010.

The Economic Barometer consists of four manuscripts published in *Population Health Management* and one comprehensive article published in *Health Affairs*. Visit the Economic Impact section of DiabetesBarometer-US.com to view the published articles.

Clinical Barometer: Promoting Uniform Measures for Diabetes Care

Overview

Currently, there is no consistent use of the various clinical quality measures for diabetes care in the U.S. Most measure sets include the same areas of measurement, but often define the measure differently. This leads to a lack of clarity for where we stand in diabetes care and what needs to happen for improvement to occur. Many of the agencies and organizations that are involved in diabetes measurement work either individually or in limited partnership. This results in a lack of consistent data and accurate information that can be shared across the diabetes and quality communities. Without consistent measurement and reporting, efforts to improve care quality suffer.

Establishing and adopting a set of uniform measures and measurement definitions would enhance the status of diabetes care received. The Clinical Barometer assesses the current state of diabetes measurement in the U.S. and identifies opportunities for building upon and improving what is already being done.

The research, conducted by the Jefferson School of Population Health, examines the current state of diabetes care quality assessment activity and provides recommendations to enhance the potential of the measurement process to improve care.

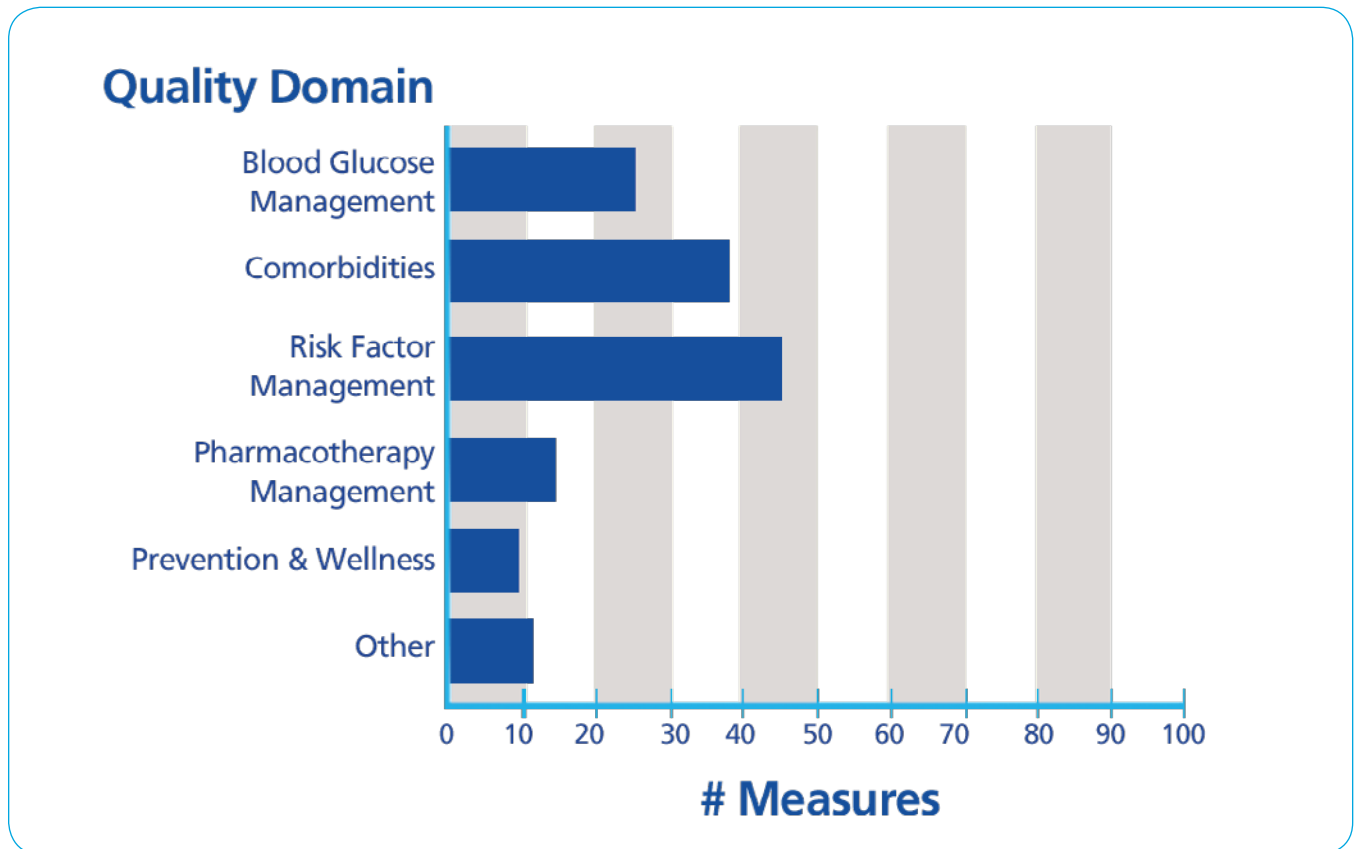
The Clinical Barometer research objectives include:

- ▶ Complete a thorough evaluation of clinical diabetes quality measurement;
- ▶ Determine key strengths, weaknesses and gaps in current measurement activities;
- ▶ Identify opportunities to expand the scope, depth and impact of these efforts; and
- ▶ Develop strategies to improve the overall state of diabetes quality measurement and patient care.

There are two components to the Clinical Barometer research:

- ▶ An environmental scan performed to identify current diabetes quality measures. The scan revealed nearly 150 distinct measures, including measures from the Agency for Healthcare Research and Quality's (AHRQ) National Quality Measures Clearinghouse, the National Committee for Quality Assurance (NCQA), American Medical Association (AMA) and the Centers for Medicare and Medicaid Services (CMS).
- ▶ In-depth qualitative interviews conducted with thought leaders whose organizational quality measures were reviewed as part of the environmental scan. Additional interviews were conducted with key stakeholders involved in the endorsement, promotion or utilization of quality measures. Interviews focused on a wide range of topics, including:
 - Organization's experience developing and using measures;
 - Perception of the strengths and weaknesses of specific measures;
 - Thoughts about the impact of quality measures; and
 - Expectations and recommendations for the future use of diabetes quality measurement.

Key Findings



Source: Leas BF, Berman B, Kash KM et al. Quality measurement in diabetes care. *Population Health Management*. 2009; 12, (5); 265-271.

- Patient perspectives such as satisfaction with care, quality of life and engagement in and understanding of care are not usually measured for diabetes patients.
- Clinical diabetes data are collected and analyzed by multiple organizations working independently, with minimal coordination and sharing of findings. As a result, there is no unified data source, which makes it difficult for researchers and policymakers to assess progress in diabetes care and outcomes.
- Significant gaps in diabetes measurement exist including:
 - Primary prevention is not well addressed by current measures;
 - Long-term outcomes, such as amputations, blindness, end-stage renal disease and mortality due to diabetes, are not a focal point of most measure sets; and
 - There is a lack of measurement of the uninsured and under-insured diabetes populations.
- Strong national leadership is needed to advance a vision for optimal diabetes care supported by enhanced clinical measurement and appropriate electronic health record development.

For questions or more information about The Novo Nordisk Diabetes Barometer, please visit DiabetesBarometer-US.com.

About Novo Nordisk

Research commissioned by Novo Nordisk through its Changing Diabetes® leadership initiative.

Novo Nordisk is dedicated to changing diabetes by acting as a partner and catalyst for change in its mission to improve the way diabetes is managed and, ultimately, defeated.

¹ Centers for Disease Control and Prevention. National Diabetes Fact Sheet, 2007.

² Centers for Disease Control and Prevention. National Diabetes Fact Sheet, 2007.

³ Gallup. Diabetes in America: Public Knowledge, Perceptions and Behavior Regarding Diabetes and Diabetes Prevention. 2008.

⁴ American Diabetes Association. Economic Costs of Diabetes in the U.S. in 2007. *Diabetes Care*. (2008) 31:596–615.

⁵ Dall, T.M., Zhang, Y, Chen, Y. et al. The Economic Burden Of Diabetes. *Health Affairs*. 29, (2); 2010.

⁶ Dall TM, Mann SE, Zhang Y, et al. Distinguishing the Economic Costs Associated with Type 1 and Type 2 Diabetes. *Population Health Management*. (2009) 12, (2); 103-110.

⁷ Zhang Y, Dall TM, Mann SE, et al. The Economic Cost of Undiagnosed Diabetes. *Population Health Management*. (2009) 12, (2); 95-101.

⁸ Zhang Y, Dall TM, Chen Y, et al. Medical Cost Associated with Pre-diabetes. *Population Health Management*. (2009) 12, (3); 157-163.

⁹ Chen Y, Quick WW, Yang W, et al. Cost of Gestational Diabetes Mellitus in the United States in 2007. *Population Health Management*. (2009) 12, (3); 165-174.