

Impact on Federal Entitlement Program Savings

Introduction

Two new studies offer powerful evidence that the Special Diabetes Program's sustained progress toward better treatments and an eventual cure for type 1 diabetes could result in potentially hundreds of billions of dollars in reduced Medicare outlays over the next 25 years.

The studies were produced by a team of noted health care economists.¹ One examined how improved diabetes treatments would impact government outlays to treat end stage renal disease (ESRD) and the second looked at how improved blood glucose controls would reduce diabetes complications with resultant savings in Medicare spending.

The Special Diabetes Program (SDP)

Congress created the Special Diabetes Program in 1997 to fill a major void it identified in type 1 diabetes (T1D) research. The current authorization provides \$150 million per year for T1D research through September 30, 2014. SDP accounts for 35% of total federal support for T1D research and has become an indispensable part of the T1D research landscape.

The SDP has led directly to new insights and therapies that have improved the lives of people with diabetes and accelerated progress toward curing, treating, and preventing T1D, many of which would benefit those with type 2 diabetes as well:²

- SDP-funded long-term studies demonstrated that intensive control of blood sugar lowers the risks of heart attacks and strokes in people with T1D, years after such control had been shown to reduce the risks of complications involving the kidneys, nerves, and eyes of T1D patients.
- SDP funded research has accelerated the development of artificial pancreas systems which early studies have found can improve blood sugar control.
- SDP-funded research found that combining a drug and laser therapy can reverse vision loss in people with type 1 and type 2 diabetes.
- SDP research has dramatically advanced understanding about the causes of the disease, opening up new pathways to curing it.

SDP and Entitlement Program Savings

Democrats and Republicans, and virtually every economist, agree that harnessing exploding Medicare costs is a critical ingredient to putting the country on more solid fiscal footing. An astounding nearly 42% of Medicare's fee for service spending is accounted for by patients with type 1 or type 2 diabetes.³ Clinical trials have demonstrated that intensive control of glucose levels and other cardiovascular risk factors can reduce the probability of devastating and costly complications later in life.

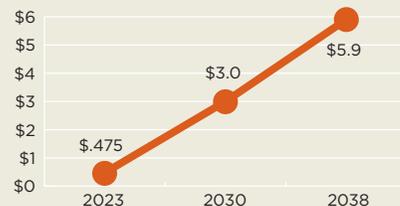
Clearly, then, improved treatments for diabetes, and eventually curing diabetes—both goals that the SDP has materially advanced in the last 15 years—have the potential to save taxpayers tens of billions of dollars over the next few decades.

End Stage Renal Disease

The first paper by Winn, O’Grady, and Huang considered the savings to Medicare by reduced outlays to treat ESRD. Since the early 1970s individuals that develop ESRD are eligible to receive Part A and Part B Medicare benefits. Spending for this population has grown due to an aging population and an increase in prevalence of diabetes. In 2008, the total Medicare spending for ESRD was over \$26 billion, which accounted for 5.9 percent of the total Medicare budget.⁴

The study found that for the current population living with diabetes, lowering ESRD rates by 50% is expected to generate Medicare savings that build over time. At the ten-year mark, the cumulative savings to Medicare are \$475 million for type 1 diabetes and \$14 billion for type 2 diabetes. By the 25-year mark, the Medicare savings reaches \$5.9 billion for type 1 diabetes and \$120 billion for type 2 diabetes.⁵

Projected Range of Medicare Savings for T1D From Improved ESRD Rates (Savings in Billions)



Projected Range of Medicare Savings for T2D From Improved ESRD Rates (Savings in Billions)



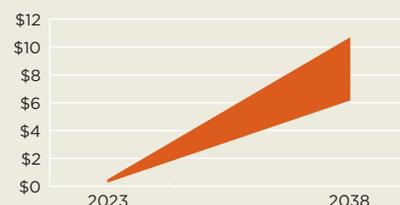
Improved Blood Glucose Control

The second paper by Winn, O’Grady, and Huang considered the impact of improved blood glucose controls on health care spending. A long-term study funded by SDP (the Epidemiology of Diabetes Interventions and Complications Trial, or EDIC) found that intensive control of blood sugar lowers the risks of heart attacks and strokes in people with T1D, building upon earlier studies showing such control reduces the risks of microvascular complications such as blindness and amputation. Since the early 2000s, the diabetes population’s glucose control has significantly improved; however, there are still many patients with very poor glucose control.⁶

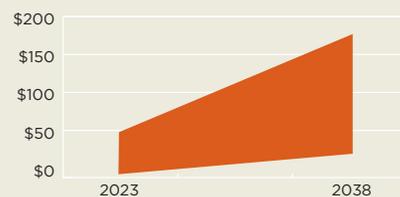
Blood glucose control is typically measured by blood tests showing plasma glucose concentrations (A1cs) over time. For people without diabetes, A1c scores range from 4% to 5.6%. The study examined the impact of various reductions in A1c levels for the population with diabetes, including the impact on spending if diabetes is effectively cured and A1c levels fall to 5% for the entire patient population.

The study concluded that for the current population living with diabetes, different glucose lowering strategies are expected to generate a range of Medicare savings that build over time. At the ten-year mark, the cumulative savings to Medicare range from \$450-\$810 million for type 1 diabetes and \$5-\$45 billion for type 2 diabetes. By the 25-year mark, the Medicare savings reaches \$5.9-10.4 billion for type 1 diabetes⁷

Projected Range of Medicare Savings for T1D From Improved Glucose Control (Savings in Billions)



Projected Range of Medicare Savings for T2D From Improved Glucose Control (Savings in Billions)



¹ Michael O’Grady, PhD, is the President of the West Health Policy Center. O’Grady is a veteran health policy expert with 24 years working in Congress and the Department of Health and Human Services. Elbert S. Huang, MD, PhD, is Associate Professor of Medicine, Director of the Center for Translational and Policy Research of Chronic Diseases, and Associate Director of the Chicago Center for Diabetes Translation Research at the University of Chicago. Aaron Winn, MPP, is a Research Associate at the Center for the Evaluation of Value and Risk in Health at Tufts Medical Center.

² National Institute of Diabetes and Digestive and Kidney Diseases. (2011). Special Statutory Funding Program for Type 1 Diabetes Research: Evaluation Report (NIH Publication No. 10-7535).

³ Potential Medicare Savings of Enhanced Glucose Control Strategies in Patients with Diabetes; Winn, O’Grady, and Huang; September, 2012.

⁴ Potential Medicare Savings of Reduced End Stage Renal Disease in Patients with Diabetes; Winn, O’Grady, and Huang; September, 2012.

⁵ These results do not account for cost savings for newly diagnosed cohorts in the future, nor those under age 30 who currently have diabetes and are therefore conservative. At the same time, these analyses do not account for the costs or potential harms associated with these ESRD lowering therapies. Winn, O’Grady, and Huang; op.cit.

⁶ Potential Medicare Savings of Enhanced Glucose Control Strategies in Patients with Diabetes; op.cit.

⁷ These results do not account for cost savings for newly diagnosed cohorts in the future, nor those under age 30 who currently have diabetes and are therefore conservative. These savings are fairly modest compared to the overall Medicare spending that is expected for these populations (e.g., \$1.8 trillion for type 2 diabetes). This reflects the fact that glycemic control is only one component of comprehensive diabetes care and is not the sole driver of health care costs in diabetes. It is important to note that there are currently no therapies that effectively reduce patients A1C levels to 5%. Additionally, a recent trial of elderly type 2 patients found that current therapies to significantly lower glucose levels caused significant harm, including increased mortality. However, the aim of this analysis