



MEMORANDUM

CDC releases 2014 National Diabetes Statistics Report - June 11, 2014

Executive Highlights

- The CDC has released a [2014 National Diabetes Statistics report](#), an update from the previous [2011 National Diabetes Fact Sheet](#).
- According to the 2014 update, 29 million Americans (9.3% of the US population) had diabetes as of 2012, up from 26 million reported in the 2011 fact sheet (8.3% of the US population) There were 1.7 million new cases of diabetes in 2012, down slightly from 1.9 million in the prior update (we doubt this is statistically significant).
- This year's report pays particular attention to hypoglycemia. The 2014 update also consolidates sections on treatment and complications into a single section titled "Managing Diabetes."

The CDC has at long last released its [2014 National Diabetes Statistics Report](#), the first update since the [2011 National Diabetes Fact Sheet](#) - this set of diabetes statistics provides vital high-level information about the prevalence, costs, and treatment of diabetes in the United States. According to the updated 2014 report (which pulls data from 2012), 29.1 million people (9.3% of the US population) had diabetes, and an estimated 28% of those cases were undiagnosed (~8.0 million patients). This compares to 25.8 million and 27% (7.0 million patients), respectively, as of the previous 2011 fact sheet (which pulled data from 2010). Newly diagnosed cases per year declined from 1.9 million to 1.7 million in the latest update, which suggested some cause for optimism though we don't think this difference is statistically significant. However, much of the impact of diabetes is felt years after diagnosis, and that fact along with the growing population of people with prediabetes (86 million in the latest update, a notable 9% rise from 79 million in the prior update) means that this epidemic will surely present a significant burden for the foreseeable future. Drawing from the [ADA's 2013 cost-of-illness study](#), which we wrote about extensively last year, the report emphasized that the total estimated US cost of diabetes in 2012 was \$245 billion.

Although the overall statistics mostly represent a continuation of historical trends, several structural changes in the latest report illustrate important new perspectives in the diabetes field. The previously separate sections on "treating diabetes" and "preventing complications" were combined into one section entitled "Managing Diabetes" - it's good to see a tighter link between the treatment of hyperglycemia and its inextricable link to complications. The latest report was the first to mention individualized blood glucose targets, a building theme in diabetes care driven by the ADA/EASD's 2013 [Position Statement](#). Notably, this CDC report was also the first in which the word "hypoglycemia" was mentioned; this was a much needed addition, given that this is the number one cited barrier to improved glycemic control (not to mention the major burden it imposes on patients, providers, and the healthcare system). We hope that future reports can expand upon the single bullet that hypoglycemia received in this year's edition.

The latest data confirms that diabetes continues to disproportionately affect certain racial and ethnic groups, including Hispanics and blacks. People with diabetes remain at increased risk of cardiovascular disease (1.7 times the risk), loss of vision (28.5% of adults over 40 with diabetes had retinopathy in 2005-2008 and 4.4% had advanced retinopathy), kidney disease (49,677 new cases in 2011), and lower limb amputations (73,000 in 2010).

	Change from 2011 to 2014	2014 CDC Report	2011 CDC Report
Total Patients	+13%	29.1 million	25.8 million
Diagnosed	+12%	21.0 million	18.8 million
Undiagnosed	+16%	8.1 million	7.0 million
> 65 years	+3%	11.2 million	10.9 million
< 20 years	-3%	208,000	215,000
New Diabetes Cases	-11%	1.7 million	1.9 million
New Pediatric Diabetes Cases	+18%	18,436	15,600
Type 1 diabetes	+41%	5,089	3,600
Type 2 diabetes			
Prediabetes	+9%	86 million	79 million
Deaths	-3%	69,071	71,382
Diabetes as underlying cause	+1%	234,051	231,404
Diabetes as any cause			
Treatment	-6%	2.9 million	3.1 million
Insulin only	-14%	3.1 million	3.6 million
Insulin + orals	+37%	11.9 million	8.7 million
Orals only	-27%	3.0 million	4.1 million
No medication			

*Note: Each report drew data from a range of years, depending on the data category. However, on average, the change between reports represents a space of ~three years.

- The 2014 National Diabetes Statistics Report drew data from a wide range of sources, including the NHANES and NHIS databases, scientific literature, and the US Census.** While we can elucidate a great deal from comparing the statistics in this report to those from previous reports, we keep top of mind that the methodologies used to collect data and calculate statistics can change from year to year. Potential confounding factors such as changes in reporting procedures and clinical guidelines could have affected the numbers to an extent. Additionally, each of the data sources used comes with their own limitations, due to issues such as incomplete geographic representation and the criteria used to define diabetes diagnoses. The CDC [webpage](#) on the data sources, methods, and references used in the report detail the exact methodologies used to calculate each set of statistics.
- The latest CDC statistics suggest that 29.1 million people (9.3% of the population) were estimated to have diabetes in the US in 2012, up from 25.8 million people (8.3% of the population) in 2010.** These numbers have been steadily increasing over the last decade, and it is estimated that over 1 in 4 cases in 2012 were undiagnosed, meaning they have no access to the treatment needed to manage their disease and prevent complications. An estimated 86 million Americans had prediabetes in 2012, up 9% (7 million patients) from the 2011 report. The total cost of diabetes in 2012, including both direct medical costs and indirect costs in lost productivity, was estimated to be \$245 billion, up from \$174 billion in 2007 - these values were first published in an [ADA cost-of-illness study](#) last year. Although this was not included in the report, another cost-of-

illness study to be presented at this year's ADA (in [late-breaking poster LB-#142 Close Concerns](#)) projects the direct costs of diabetes will near half a trillion dollars by 2030.

- **Interestingly, while the number of newly diagnosed pediatric diabetes cases grew substantially from the 2011 report to the 2014 report (+18% for type 1 diabetes and +41% for type 2 diabetes), the total pediatric diabetes population decreased by 3%.** The passage of the "baby boom echo" population peak out of the pediatric age range may have played a role, but the incongruity could just as easily be due to changes in the way each value was measured from year to year. We'll be asking questions on this one to better understand it and will report back.
- **People with diabetes remain at increased risk of cardiovascular disease (1.7 times the risk), loss of vision (28.5% of adults over 40 with diabetes had retinopathy in 2005-2008 and 4.4% had advanced retinopathy), kidney disease (49,677 new cases in 2011), and lower limb amputations (73,000 in 2010).** Major changes from the 2011 report include that the cardiovascular risk estimate went from a vague "two to four times higher" estimate in the last report to the more specific 1.7x estimate - a change of this sort seems more likely to stem from a change in data sourcing than anything else but we're keen to know whether this may signal patients living longer. There was an increase in lower-limb amputations in diabetes patients from ~65,700 (data from 2006) to ~73,000 (data from 2010), but overall amputations are still down from previous reports (82,000 in the 2002 report). Worryingly, the number of patients on dialysis or with a kidney transplant due to diabetes rose 13% from 2008 (202,290) to 2011 (228,924) - the treatment of diabetic nephropathy remains one of the biggest areas of unmet need in diabetes care, and an area of rapidly burgeoning costs (dialysis is very expensive on a per-patient basis - again, we are not sure whether this change is statistically significant). This year's report had much less detail than previous reports on dental disease and diabetes-related complications of pregnancy - an effort to make the sure space used to discuss each complication is more commensurate with the significance of the complication might be a reason.
- **The report did offer some basis for possible optimism:** the number of new diagnosed cases of diabetes annually fell from 1.9 million in the 2011 report to 1.7 million in the 2014 report. Of course, without more data points, it is hard to know if the change reflects a true change in numbers or if it may have been impacted by a change in the way the statistics were calculated, but the trend is in the right direction. Additionally, the number of deaths from diabetes held fairly steady from the 2011 report (231,404 cases in which diabetes was listed as a cause of death, and 71,382 deaths for which diabetes was a leading cause) to the 2014 report (234,051 in which diabetes was listed as a cause, including 69,071 in which it was the leading cause). While some of the more lagging indicators (like late-stage complications) still appear to be on the rise, the 2014 report at least raises the possibility that some indicators may be beginning to move in the right direction. On the other hand, we'll wait to hear from Dr. Ann Albright of the CDC on how to interpret this (we have a call into her - if you can reach her for us, please let us know!)
- **From the previous report, there was a 37% increase in the number of patients on oral medications only, from 8.7 million to 11.9 million, while the number of patients on insulin or no medications at all decreased.** The data from the 2011 report was drawn from the years 2007-2009, while the data in the 2014 report was drawn from the years 2010 - 2012. The increase in oral medication usage may reflect the addition of newer, better oral drug classes to the type 2 diabetes armamentarium (including DPP-4 inhibitors and, most recently, SGLT-2 inhibitors). We were glad to see the reduction (if slight) in the number of patients on no medication, which we hope is a sign of a reduction of inertia to initiation on pharmacotherapy. We wonder how non-oral, non-insulin agents such as GLP-1 agonists may have silently impacted these trends - presumably more will be going onto this class as the class is easier to teach and take.
- **The structure of the CDC's report reflects a shift towards a more individualized, self-management approach to diabetes treatment - this is a very important shift in our view.** Whereas previous reports had presented advice about treating diabetes and preventing

complications as two separate sections, the 2014 report combined the two topics into one section titled "Managing Diabetes." The section offers a more concise, integrated approach to treating and managing the disease. While the earlier reports did mention self-management and variable medication regimens, **this was the first to encourage individualized blood glucose targets, reflecting a trend in several organizations' suggested treatment algorithms** (including the [2013 ADA/EASD Position Statement](#) that was built around the concept of individualized treatment).

- **This report was the first CDC diabetes report to address the significant risks associated with hypoglycemia.** This is a very important development, as hypoglycemia is cited as the number one barrier to improved glycemic control. A reduced risk of hypoglycemia has been one of the most promising aspects of some of the newer diabetes drugs, and it is reassuring to see that the CDC is taking this issue seriously. **Data on emergency room visits included in the report - 282,000 for hypoglycemia (as well as 175,000 for hyperglycemia) in 2011 - evince the seriousness of hypoglycemia from both a quality-of-life and cost perspective.** The report also highlighted older type 2 diabetes patients and children with type 1 diabetes as being at a particularly high risk for hypoglycemia - clearly this is a nod to the concern over hypoglycemia in the elderly that we've been hearing so much about from thought leader Dr. Irl Hirsch - it's wonderful to see the clear influence of so many thought leaders in our ecosystem.
- **Depressingly, diabetes continues to disproportionately affect minority groups.** As in past years, the age-adjusted prevalence of diabetes in adults is higher among black and Hispanic populations (13.2% and 12.8%, respectively) than among non-Hispanic whites (7.6%). This report was the first time the CDC reported the prevalence among different groups of Asian Americans, which ranged from a notable low of 4.4% for people of Chinese descent to a high of 13% among those of Indian descent. The inclusion of this data may reflect the increased attention given in recent years to the differential metabolic risks in people of Asian descent.

-- by Emily Regier, Manu Venkat, Adam Brown, Jenny Tan, and Kelly Close