

Nashville's Diabetes Crisis: Today and Future Trends

Nashville Metropolitan Statistical Area (MSA)

The Nashville Metropolitan Statistical Area spans 13 counties in Tennessee, including Davidson and Murfreesboro, with a population of 1,608,300.^{25,26}

A recently released study² and the 2011 National Diabetes Fact Sheet⁶ from the Centers for Disease Control and Prevention (CDC) predict a dramatic increase in diabetes between 2010 and 2050. Using this new information from the CDC, the Institute for Alternative Futures diabetes model estimates that the number of people living with diabetes (diagnosed and undiagnosed) in the Nashville Metropolitan Statistical Area will increase 66% by 2025 from 234,800 to 389,500.¹ The resulting medical and societal cost of diabetes will be \$3.7 billion – a 76% increase from 2010.¹

In 2010, there were 234,800 people in the Nashville MSA with diabetes.¹ Some 87,200 of them were undiagnosed¹ and possibly beginning to suffer from the common complications of diabetes, including eye, kidney, lower extremity, and heart damage.³ Another 405,000 people had pre-diabetes,¹ a condition in which the blood sugar level is higher than normal but not yet in the range for diabetes.⁴ If they do not take action, individuals with pre-diabetes can often progress to diabetes within 10 years.⁴

Diabetes is frequently associated with obesity, high blood pressure, high cholesterol, and depression.^{4,5} It can result in many debilitating complications and shorten life span by about 4 to 23 years depending on age, sex, and ethnicity.⁷ About 68% of deaths among seniors with diabetes are due to heart disease and 16% are due to a stroke related to their disease.⁶ In 2010, some 26,800 people in the Nashville MSA were visually impaired, some even blind, because of diabetes.¹ That year diabetes also caused 365 cases of renal failure and 475 lower extremity amputations.¹ On the whole, diabetes contributed to more than 1,980 deaths.¹ The total cost of diabetes in the Nashville MSA, including medical expenses and lost productivity, was \$2.1 billion in 2010.¹

The risk of developing diabetes is much higher as one gets older, especially after the age of 45.⁸ There were 170,100 seniors²⁷ living in the Nashville MSA in 2010 and approximately 77% of them had either diabetes or pre-diabetes.⁶ Of the 45,800 seniors living with diabetes in 2010, some 33,400 had diagnosed diabetes¹ and another 12,400 had diabetes that had not yet been diagnosed¹ and was possibly beginning to cause organ damage.³ The 85,100 seniors in the Nashville MSA with pre-diabetes¹ also were largely unaware of their condition⁹ and continue to have a significant risk of eventually developing diabetes.⁴

The American Diabetes Association recommends that testing for diabetes be considered in adults of any age who are overweight or obese and also have one or more risk factors for diabetes. In those without these risk factors, testing should begin at age 45. If test results are normal, repeat testing should occur at least every three years.¹⁰ The risk of diabetes increases as one gets older,⁸ so it is especially important for seniors to be tested for diabetes – a benefit that Medicare now covers.¹¹

We now understand more about delaying or even preventing the onset of diabetes as well as how to effectively treat it, resulting in a dramatic reduction of complications and premature death.^{12,13,14} In fact,

many scientific studies have shown that relatively simple lifestyle changes, such as modest weight loss and increases in regular physical activity, can often prevent those most at risk, including those with pre-diabetes, from developing diabetes, or significantly delay the onset of the disease.^{14,15} If 50% of people with pre-diabetes successfully made these lifestyle changes, it could reduce the number of new cases of diabetes in the Nashville MSA by about 1,700 a year.^{1,2,14} Between now and 2025 that would be a reduction of about 27,900 people with diabetes with a cumulative savings of about \$1.8 billion.¹ Likewise, if 50% of the people with diagnosed diabetes received high quality medical care and complied with their doctors' recommendations, the number of lower extremity amputations could be reduced by about 160 per year and result in 2,700 fewer amputations by 2025.^{1,6} Similarly, 2,200 fewer people could develop end-stage renal failure by 2025.^{1,6} However, even with these interventions, there would still be 361,600 people living with diabetes in the Nashville MSA.¹

Nashville Metro Diabetes Statistics¹	2000	2010	2015	2025
Population	1,311,800	1,589,900	1,759,900	2,108,400
Pre-diabetes	191,100	405,000	448,200	537,000
Diagnosed diabetes	57,700	147,600	191,400	283,900
Undiagnosed diabetes	24,700	87,200	94,200	105,600
Total with diabetes (diagnosed and undiagnosed)	82,400	234,800	285,600	389,500
Complications:				
Visual impairment	11,900	26,800	33,900	48,900
Renal failure	195	365	435	590
Leg amputations	385	475	530	670
Annual deaths attributable to diabetes	990	1,980	2,400	3,010
Total annual cost (2010 dollars)*	\$0.6 B	\$2.1 B	\$2.6 B	\$3.7 B
Annual medical costs	\$0.4 B	\$1.5 B	\$1.8 B	\$2.6 B
Annual nonmedical costs	\$0.2 B	\$0.6 B	\$0.8 B	\$1.1 B

* Costs in 2000 only for diagnosed diabetes, other years also include undiagnosed and pre-diabetes costs

2010 Nashville Metro Diabetes Statistics for Seniors (65 & older) and Minorities¹					
Subgroups	Seniors	African Americans	Hispanic Americans	Asian Americans	Native Americans
Population	170,100	243,300	104,900	36,600	4,800
Pre-diabetes	85,100	62,000	26,700	9,300	1,200
Diagnosed diabetes	33,400	27,500	10,300	3,200	540
Undiagnosed diabetes	12,400	16,300	6,100	1,900	320
Total diabetes (diagnosed and undiagnosed)	45,800	43,800	16,400	5,100	860
Complications:					
Visual impairment	6,800	4,900	1,900	590	100
Renal failure	85	110	32	6	2
Leg amputations	115	135	50	8	3
Annual deaths attributable to diabetes	465	625	170	28	11
Total annual cost	\$447 M	\$383 M	\$145 M	\$46 M	\$8 M
Annual medical costs	\$314 M	\$267 M	\$102 M	\$32 M	\$6 M
Annual nonmedical costs	\$133 M	\$116 M	\$43 M	\$14 M	\$2 M

Reducing the future burden of diabetes in the Nashville MSA depends upon the promotion of targeted screening for asymptomatic adults to identify those with pre-diabetes and undiagnosed diabetes,

improved access to quality medical care, and increased patient compliance with therapy.^{14,15,17} However, halting the “twin epidemics” of diabetes and obesity will also require fundamental change in all segments of society, including greater access to opportunities for physical activity in our schools, workplaces, and communities and a significant shift in the American diet away from sugar, salt, refined carbohydrates and saturated fats and toward more fruits and vegetables.¹⁵ In short, we all play an important role in conquering diabetes.

These forecasts are based on available national diabetes data, including population projections extrapolated to the state, and the CDC’s 2011 National Diabetes Fact Sheet and latest diabetes prevalence projections to 2050. They assume a steady, but conservative, reduction in the number of people with complications due to better awareness of the risks of diabetes, earlier screening and intervention, and more effective therapies.

For endnote references and details on the Institute for Alternative Futures Diabetes 2025 Forecasting Model Methodology, visit www.altfutures.org/diabetes2025.

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