

## Diabetes

**D**iabetes is a heterogeneous group of metabolic disorders characterized by high blood glucose levels. Type 1 and Type 2 are the most common forms. Type 1 accounts for 5 to 10% of the cases and 85 – 90% are Type 2. The rest are either gestational diabetes or diabetes secondary to other conditions. Complications that can result from poorly managed diabetes represent a significant cause of morbidity and mortality that include heart disease, stroke, blindness, kidney failure, leg amputations, pregnancy complications and deaths related to flu and pneumonia.

Many adults have pre- diabetes, a condition in which blood glucose levels are higher than normal but are not high enough for a diagnosis of diabetes. People with pre-diabetes are at increased risk for developing Type 2 diabetes and for heart disease and stroke. Over the past decade, primary prevention research studies have demonstrated that modest lifestyle changes can prevent or delay the onset of Type 2 adults among high-risk adults.

A disheartening trend has been the increase of Type 2 diabetes diagnosed in children and adolescents. There is no New York State or local data as there is for adults. Anecdotal data from providers and school health officials substantiate this observable trend, however.

### Data Analysis

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#### Diabetes mortality

Rate per 100,000 pop., 2000–2002.	
..... Age-adj. (Crude)	
<b>Tompkins... 18.6 (15.0)</b>	
Cayuga ..... 19.1 (22.5)	
Cortland ..... 19.2 (19.2)	
Tioga..... 17.6 (18.8)	
CNY ..... 20.7 (22.4)	
NYS ..... 19.7 (20.5)	
HP 2010 ..... 45.0 (—)	

Diabetes mortality rates — situations where diabetes is indicated as the primary reason for death — when adjusted for age, do not vary widely within the Central New York (CNY) region. Most CNY rates cluster around 20 per 100,000 residents. The Adirondack counties in the CNY region have markedly higher rates — the rate for St. Lawrence county is 26.8.

Within the close regional comparison used throughout this document, Tompkins has the second lowest age adjusted rate of diabetes mortality. (*See Figure 51, page 79.*)

Tompkins' crude rate is the lowest thanks to the county's median age which is over 7 years younger than the state as a whole. See table at left.

Early on in the 10-year span from 1993–2002, the crude rate for diabetes mortality dropped 61 percent in Tompkins County, hitting its low in 1996. Since then the yearly rate has varied. A review of the trend by 3-year averages shows that the local rate remained relatively steady from 1996–2002. Over the complete 10-year cycle the rate for all of Upstate has climbed steadily with an overall rise of nearly 22 percent. (*See Figure 52, page 80.*)

Across New York State, diabetes prevalence among adults more than doubled from 1996–2003 to 7.4 percent according to behavioral Risk Factor Surveillance System (BRFSS) surveys. (*See Figure 53,*

<b>Physician diagnosed</b>	
Diabetes	
BRFSS 2003, Percent.	
<b>Tomp-Cort.....</b>	<b>4.0</b>
Cayuga-Sen-Way.....	7.4
Che-Sch-Tioga.....	8.3
CNY.....	8.1
NYS.....	7.2
.....95% C.I. =	2.0
.....	0.6 for NYS.
<b>HP 2010.....</b>	<b>2.5</b>

page 80.) BRFSS data are self-reported responses to random telephone surveys. Diabetes prevalence is based on respondents who report that a doctor has told them that they have diabetes.

Local BRFSS data for 2003 show that the Tompkins–Cortland sampling group has the lowest prevalence of diabetes in the CNY region: half the CNY rate. (See Figure 54, page 81.) Note that these data are not age adjusted which, as noted above, may skew the Tompkins County data downward and to a lesser extent, the Cayuga County data upward. The Healthy People 2010 target for diabetes prevalence is 2.5 percent.

Another caution when interpreting BRFSS results is that unlike vital statistics and SPARCS counts, these data are subject to sampling error, which varies depending on the sample size. BRFSS error is expressed using a 95% confidence interval (C.I.) In the situation under discussion here there appears to be no significant difference in diabetes prevalence among all groups shown except for Cortland–Tompkins.

Within the Tompkins–Cortland sampling group there are apparent differences in diabetes diagnosis by age and by education. Although some of the sample sizes are especially small and the CI's high, it is very tempting to conclude that individuals age 55+ are significantly more likely to have had a physician tell them they have diabetes than those from age 18–54 years. Though not quite as pronounced, there is a strong suggestion that those with only a high school education or less are more likely to have been diagnosed than those whose education went beyond high school. (See Figure 55, page 81.)

Diabetes prevalence is also recorded using diabetes related hospitalizations. While these data are not subject to sampling error, they are limited to situations requiring admission to a hospital. Not included are emergency room treatments or, of course, individuals managing their diabetes to the degree that hospitalization is not required.

Regional comparisons for diabetes related hospitalizations are presented in three tables: average rate for 1998–2003, trends for 1998–2003, and average rate by age, 2000–2003. (See Figure 56, Figure 57, Figure 58, page 82 and following.) There is no adjustment for age in the first two.

In almost all of these data sets, the rates of diabetes related hospitalizations in Tompkins County is by comparison, extremely low. The exception is Tioga County, which runs very close to Tompkins in all sets. In the first set, all diabetes related hospitalizations 1998–2003 (Figure 56) Tompkins' rate is better than half that of Cortland, Cayuga and CNY, and more than one-third the statewide rate.

One instance where Tioga County has more favorable data than Tompkins County is in the comparisons by age (Figure 58.) Here the

<b>Diabetes related</b>	
<b>hospitalizations</b>	
Rate per 10,000 pop.,	
1998–2003	
Tompkins.....	5.9
Cayuga.....	15.1
Cortland.....	12.5
Tioga.....	5.2
CNY.....	13.3
NYS.....	18.9

sharp rise in hospitalizations for those age 65+ in Tompkins County follows closely the pattern seen in the other counties and regionally. The sharp difference is not seen in Tioga.

A lower rate of hospitalizations in the younger age groups is also seen in Tioga as compared to Tompkins County, most prominently in the under age 18 group.

Note should also be taken of the trend in hospitalizations 1998–2003 (*Figure 57.*) While Tompkins and Tioga are both running far below Cayuga and Cortland, the latter two have shown some downward turns while the former two have maintained a slight, though steady upward trend.

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## Community Resources

### Diabetes Control Coalition

TCHD's Health Promotion Program and the diabetes educator at Cayuga Medical Center (CMC) collaborate with regional partners in a diabetes control coalition funded by the New York State Department of Health. For the past 5 years, TCHD and CMC have targeted primary care providers. Diabetes care manuals were given to providers for distribution to their patients and enrollment in diabetes education classes at CMC increased as result of the effort. In the past year effort have been directed to reach the community with educational sessions on pre-diabetes.

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## Opportunities for Action

Reducing obesity in adults and children through regular physical activity and healthy eating are the most effective strategies in reducing diabetes in the community.

## Figures and Tables

Figure 51 — Diabetes mortality, regional comparison

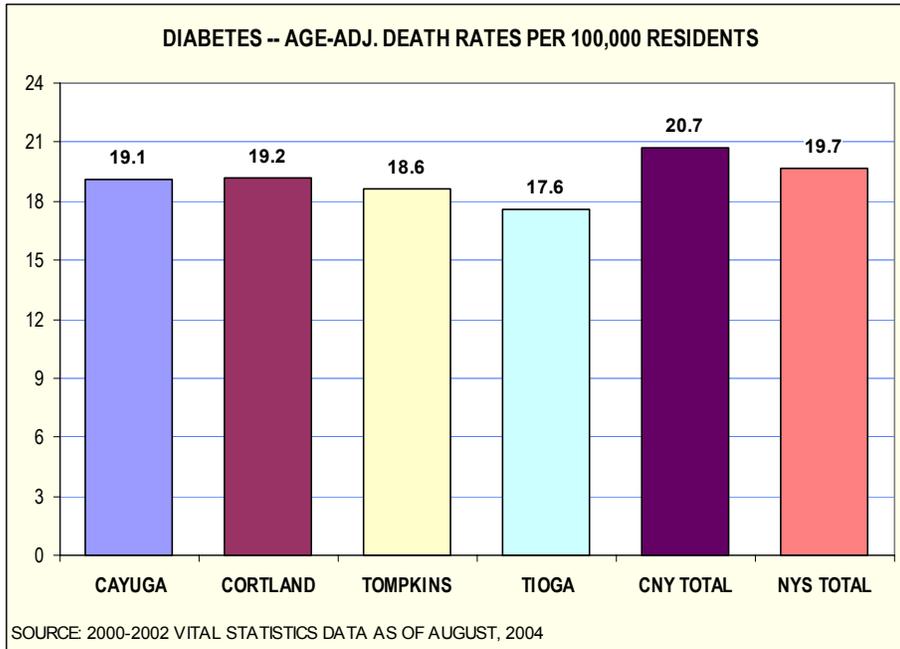


Figure 52 — Diabetes mortality, 10-year trend

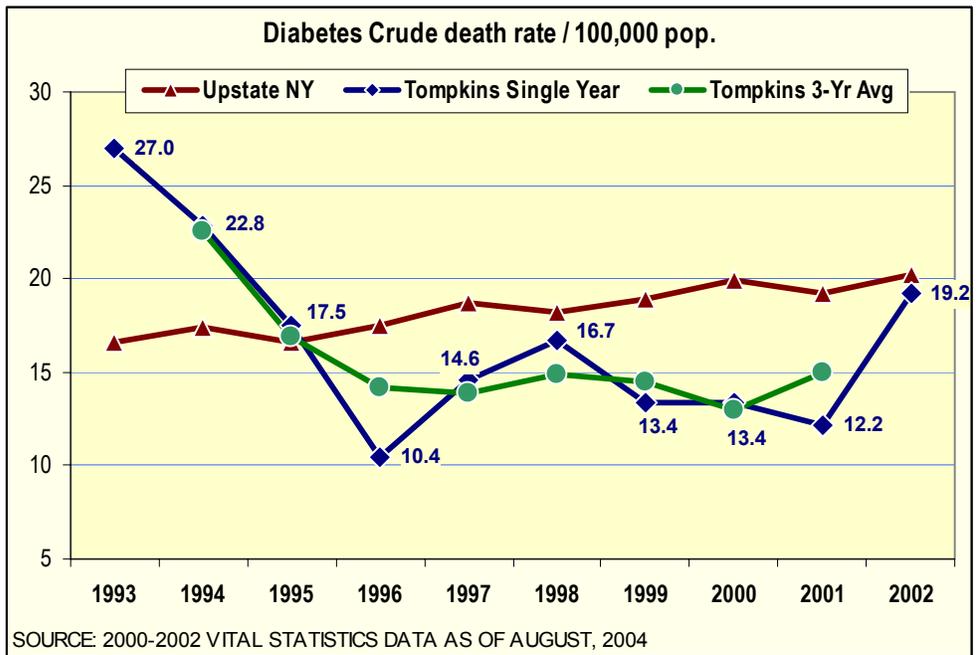


Figure 53 — Diabetes prevalence age 18+, NYS, 11-year trend (BRFSS)

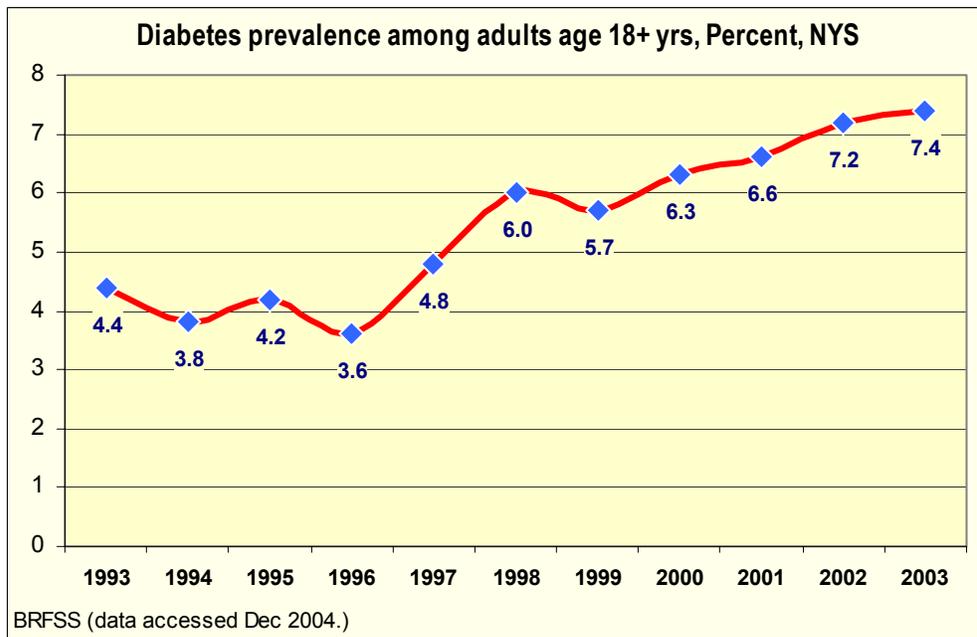


Figure 54 — Physician diagnosed diabetes (BRFSS), regional comparison

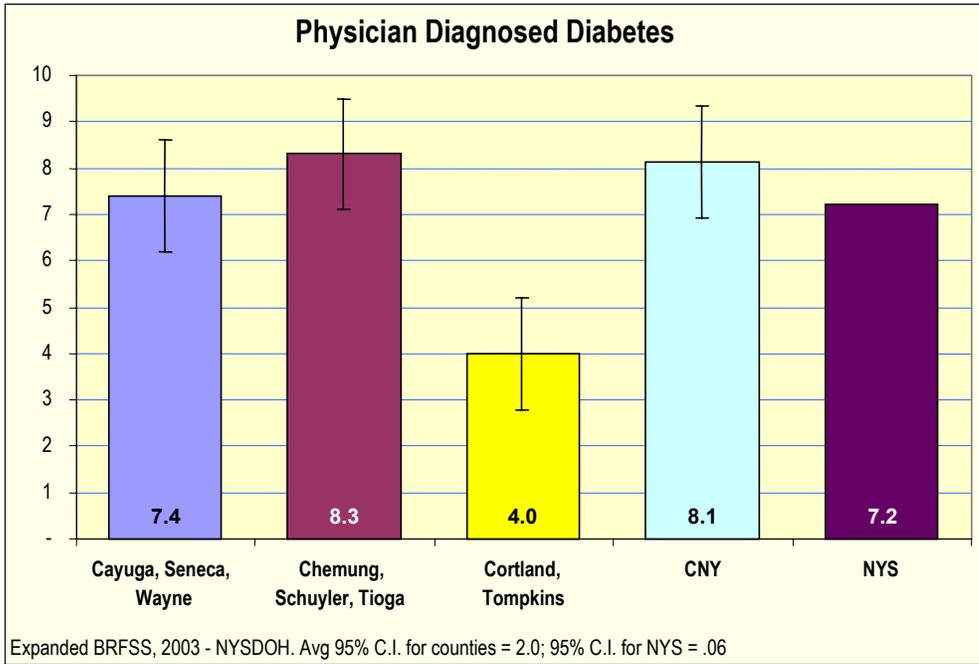
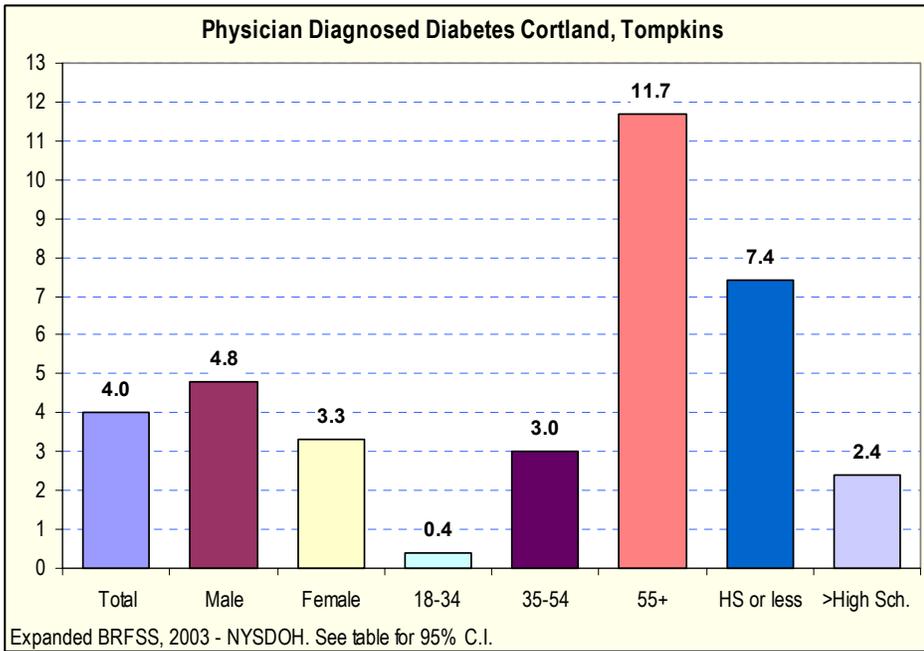


Figure 55 — Physician diagnosed diabetes, Cortland-Tompkins, demographic comparison.



**Physician Diagnosed Diabetes**

Cortland, Tompkins

Expanded BRFSS, 2003 – NYSDOH

Demographic Groups	n <sup>1</sup>	Yes % <sup>2</sup>	n	No %	C.I. <sup>3</sup>
Total	33	4	611	96	1.5
Male	15	4.8	247	95.2	2.5
Female	18	3.3	364	96.7	1.6
18-34	1	0.4	175	99.6	0.8
35-54	9	3	237	97	2
55+	23	11.7	193	88.3	4.9
HS or less	19	7.4	193	92.6	3.6
>High Sch.	14	2.4	418	97.6	1.4
				Avg.	2.3

<sup>1</sup>Pcts based on row denominators of less than 50 are unstable and should be used with caution<sup>2</sup>Weighted Percent<sup>3</sup>95% Confidence Interval

Figure 56 — Diabetes related hospitalizations, regional comparison

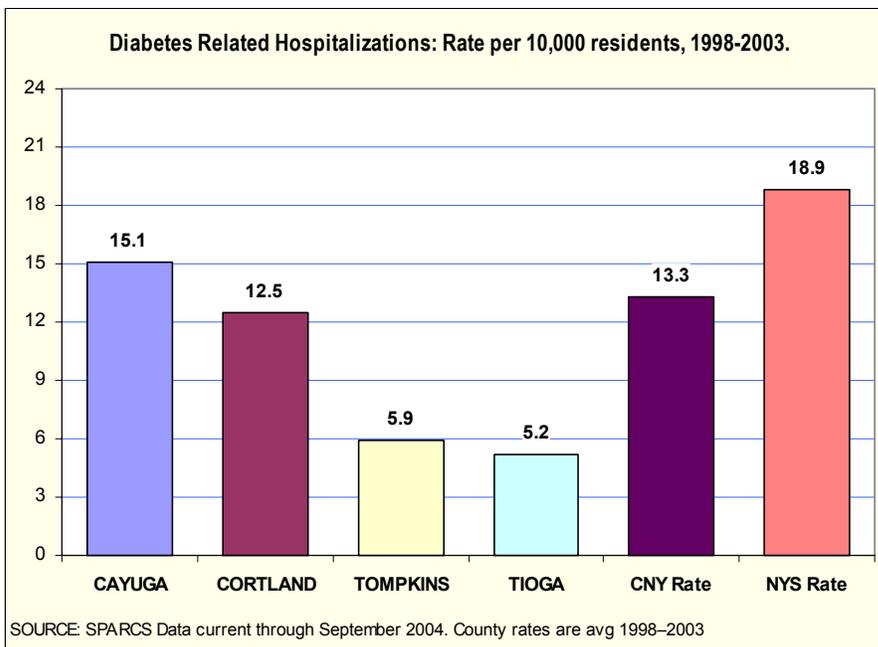


Figure 57 — Diabetes related hospitalizations, 6-year trend by county

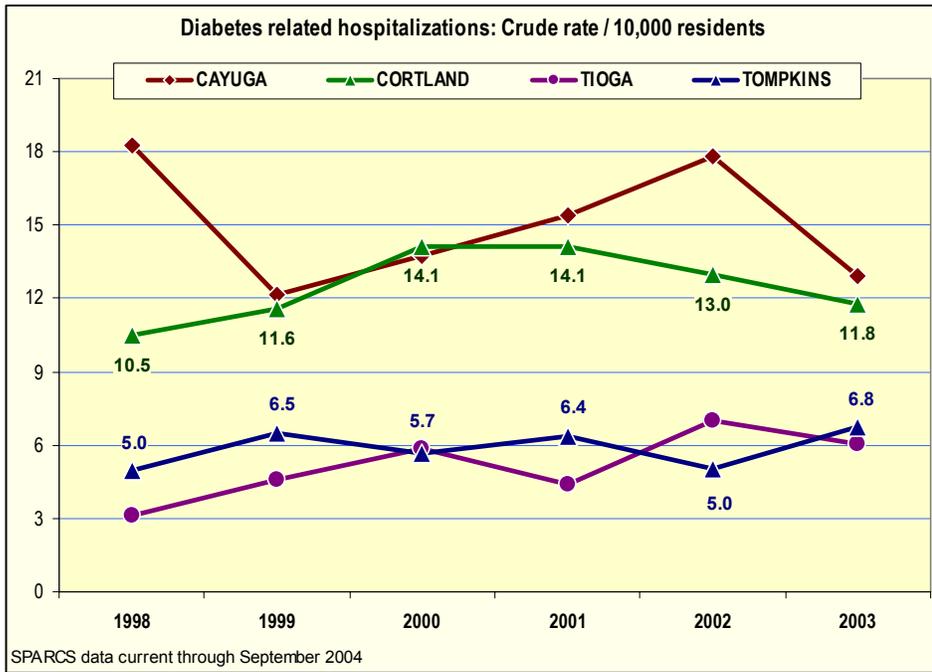


Figure 58 — Diabetes related hospitalizations by age, regional comparison

