Respiratory Diseases

Data Analysis

The International Classification of Diseases (ICD) was revised in 1994. During the transition between ICD9 and ICD10 codes, certain conditions are dual coded. Therefore in this document hospitalization data for categories of respiratory diseases are interchangeably referred to as Chronic lower Respiratory Disease (CLRD) and Chronic Obstructive Pulmonary Disease (COPD.) For the most part Tompkins County shows relatively low incidence in these categories and in asthma.

CLRD Mortality
Age-adj. rates /100,000 pop., 2000–2002.

Tompkins	**42.7**
Cayuga	57.0
Cortland	71.2
Tioga	48.9
CNY	53.6
NYS	34.8

It is interesting to note that the Central New York (CNY) region — driven by Cortland, St. Lawrence and Oswego Counties — has the highest age adjusted CLRD mortality rate among the eight NYSDOH designated regions. In fact, Cortland County is the highest statewide.

By contrast, Tompkins County has among the lowest age-adjusted rates of CLRD death. And though local CLRD deaths have varied over the 10-year period 1993–2002, the end of the period is about the same as the start. Upstate rates over the period have plateaued after a rise over the latter part of the 1990's. *(See Figure 171 and Figure 172, page 186.)*

The Healthy People 2010 (HP2010) target, expressed as deaths from COPD, rate age-adjusted per 100,000 population age 45 years and over, is 60.0.

CLRD Hospitalizations
Rate per 100,000 pop., 2000–2003.

	All Ages
Tompkins	**184**
Cayuga	400
Cortland	400
Tioga	94
CNY	335
NYS	391

Hospitalizations caused by COPD are also relatively low in Tompkins County in comparison to neighboring counties, the region and state. The rate in Tioga County however, is about half that in Tompkins.

The vast majority of CLRD/COPD hospitalizations occur for individuals age 65 and over. COPD hospitalizations by age are shown in *Figure 173, page 187*. When reviewing these data remember that the base of each rate is specific to the segmented population; rates across age groups should not be compared directly, but relatively.

Accordingly, where Tompkins County has seen a per-100,000 rate of 184 COPD hospitalizations for the population that includes all age groups, the per-100,000 rate is over 1,000 for the smaller population subset of those age 65+. The actual number counts in these cases, averaged across 2000–2003, are 190 for all ages and 104 for age 65+. Still, although the actual count for the 65+ population is within sight of half that of the general population, within their group of fewer members the relative impact is more than 5 times greater.

Tioga County rates

At this time, mention should be made of a statistical uncertainty

which is particularly evident in the data for CLRD and asthma hospitalizations. The Tioga County rates for these indicators are by comparison as to beg an explanation..

For the residents of western Tioga County, Robert Packer Hospital in Sayre, Pennsylvania is likely to be the destination of choice for medical services. The hospital is one mile away from the state border. The statistical uncertainty comes into play because NYSDOH hospitalization data does not include data from hospitals in other states, even if the patient is a resident of New York State. As such, this data is lost with respect to the statistics quoted throughout this section and the entire document.

Mortality rates are not affected by this circumstance, and the exact degree to which the hospital discharge rates are affected has not been investigated for the purposes of this document.

Asthma mortality

While our region sees annual age-adjusted rates for CLRD deaths averaging around 50–60 per 100,000 population, age-adjusted asthma death rates rarely break 2 per 100,000. Among the counties and regions compared throughout this document, Cortland County has the highest age-adjusted rate for asthma mortality, and Cayuga County the lowest, the latter being about one-fifth of the former.

Still, the number counts are small — total deaths for 2000–2002 are 3 in Tompkins County, 3 in Cortland County, one in Cayuga and 2 in Tioga. See *Figure 174, page 188* for age-adjusted death rates and Figure 175 for crude (not adjusted) rates. The latter adds the Upstate region to the mix. The reason for this — which will become more evident as hospitalization data are reviewed later in this section — is to provide a statewide comparison that excludes the asthma-heavy weight of New York City.

The 10-year trend for asthma mortality in Tompkins County is shown in *Figure 176, page 189*. While the entire Upstate region shows an overall decrease in asthma mortality rates, the path for Tompkins County cannot be reasonably determined from these data.

Asthma diagnosis: BRFSS

The extent of the population that is living with asthma is revealed through the Behavioral Risk Factor Surveillance System (BRFSS) survey and through hospital discharge records. The BRFSS asks respondents if they have ever been diagnosed with asthma by a medical professional and if they are currently diagnosed as having asthma.

The limitations of the BRFSS — discussed in sections throughout this document — are evident here, too. These are the high levels of sampling error and the grouping of counties into single data sets (as a way to reign in the error potential.)

From the 2003 BRFSS survey, Tompkins County grouped with

Cortland County has the highest level of ever-diagnosed in CNY *(see Figure 177, page 189.)* When the 95% Confidence Intervals (C.I.) are taken into account, the best interpretation of *Figure 177* is that all populations in the comparison have an equal percent of diagnosis. As for the Cortland–Tompkins sample group, it is difficult to reconcile this with other county specific asthma data, for example *Figure 181* and *Figure 184* that show hospitalization rates for Cortland are much higher that for Tompkins.

As for those with a current asthma diagnosis, the BRFSS data shows no real difference across the regional comparison; about 8–9 percent of the population reports being currently diagnosed with asthma *(see Figure 179, page 190.)*

Looking within the Tompkins–Cortland sampling area, some demographic differences may prove to be statistically significant for ever-diagnosed and/or currently-diagnosed. These cautiously include: more females diagnosed than males, fewer age 55+ than age 18–34 ever-diagnosed, and that a current diagnosis is less prevalent among those with an education above high school. *(See Figure 178, page 190, and Figure 180, page 191.)*

The asthma hospitalization rate in the New York City (NYC) region is 3-times that of the Upstate New York area. The NYC region includes the counties of Bronx, Kings (Brooklyn), New York (Manhattan), Queens and Richmond (Staten Island.) The Upstate area excludes the NYC counties and the Long Island counties of Nassau and Suffolk. As suggested above, the extremely high rate of asthma hospitalizations in NYC skews the total rate for New York State (NYS) making the latter less useful as a reference point for comparison with local rates. For that reason Upstate area totals replaces NYS totals in some of the asthma hospitalizations presentations. Refer to *Figure 181, page 191 and Figure 185, page 193* for clarification.

Asthma hospitalizations
Avg. discharge rate per 100,000 pop, 2000–2002.

Tompkins	**56.1**
Cayuga	132.2
Cortland	115.1
Tioga	29.1
CNY	116.5
NYS	205.9

Tompkins County has among the lowest rates of asthma hospitalizations in the state — less than half that of the total CNY rate. (Tioga has the lowest rate statewide. See the discussion about the uncertainty of some Tioga County rates on page 181, above.) The 10-year trend for asthma hospitalizations has shown a steady decline. From 1993–2002 the Upstate rate has dropped 33 percent, and Tompkins County's 3-year average rate has declined 31 percent. Most of that decline came in the first half of the period and the Tompkins 3-year average has been relatively flat since 1997. *(See Figure 182, page 192.)*

The single year difference between the high mark in 1993 and the low in 2002 is actually greater, however see-sawing rates from 1997–2002 suggest the 3-year average is a better tool for reading the long-term trend in Tompkins County.

trend in Tompkins County.

As was described for COPD/CLRD, hospital discharge rates for asthma vary widely by age group *(see discussion for CLRD Hospitalizations, page 181.)* However, whereas CLRD hospitalization rates where highest among the age 65+ population, the asthma rates are highest among children age under 5 years.

Asthma discharges by age
Tompkins 2000–2002.

	Avg. number /yr.	(Rate)
Age <5	10	(245)
05–14	5	(49)
15–24	3	(10)
25–44	15	(57)
45–64	11	(57)
Age 65+	11	(118)

Figure 183, page 192 displays Tompkins County discharge rates across all age groups with a comparative reference to CNY. The full six-way regional comparison is shown in *Figure 184*, though for only 3 age groups: under 5, 5–14, and 65+ years. When reviewing the comparisons by age remember that comparisons across ages demonstrate the differing degree of impact — or probability of impact — the disease has on a particular age group, not a difference in volume of incidents. See *Asthma discharges by age* at left to compare the numbers for count vs. rate in Tompkins County.

As discussed above, overall asthma hospitalizations have been declining or steady over the 10-year trend period, 1993–2002 *(see Figure 182, page 192.)* The course of hospitalizations by age group are relatively consistent with the overall finding.

The 3-year average discharge rates for Tompkins County children under age 5 dropped through the mid-1990's and then flattened or rose slightly from 1997–2002. Three-year rates for the age 5–14 group fell steadily and markedly from 1996 through the period, though the single year rate doubled from 2001–2002 *(see Figure 186, page 194 and Figure 187.)* Ages 15–24 and 45–64 have also shown declines in asthma hospitalization discharge rates *(see Figure 188 and Figure 190.)* Upstate rates have followed similar patterns.

In opposition to the Tompkins County and Upstate area trends, asthma discharge rates for the local age 25–44 group and age 65 and over group have seen increases over the 10-year review period. *(See Figure 189, page 195 and Figure 191, page 196.)*

Community Resources

Unrecorded asthma incidence

The low asthma hospitalization rate in Tompkins County may lead to the assumption that asthma is not a problem here. It should be noted that hospitalization data is the only source of measurable data. One explanation for the low rates in this county is that asthma is medically well managed here, particularly pediatric asthma. However, there are certain schools within the county where children lack the necessary

medical equipment to manage their asthma due to their family's financial circumstances. These children often require more frequent and direct care from school nurses to help them manage their condition.

CNY Asthma Coalition

In early 2005, TCHD's Health Promotion Program began working with the Central New York Asthma Coalition. The American Lung Association in Syracuse serves as the lead agency with funds provided by the NYSDOH. Activities are in discussion at the time this document is being prepared.

Figures and Tables

Figure 171 — Chronic lower respiratory disease mortality, regional comparison

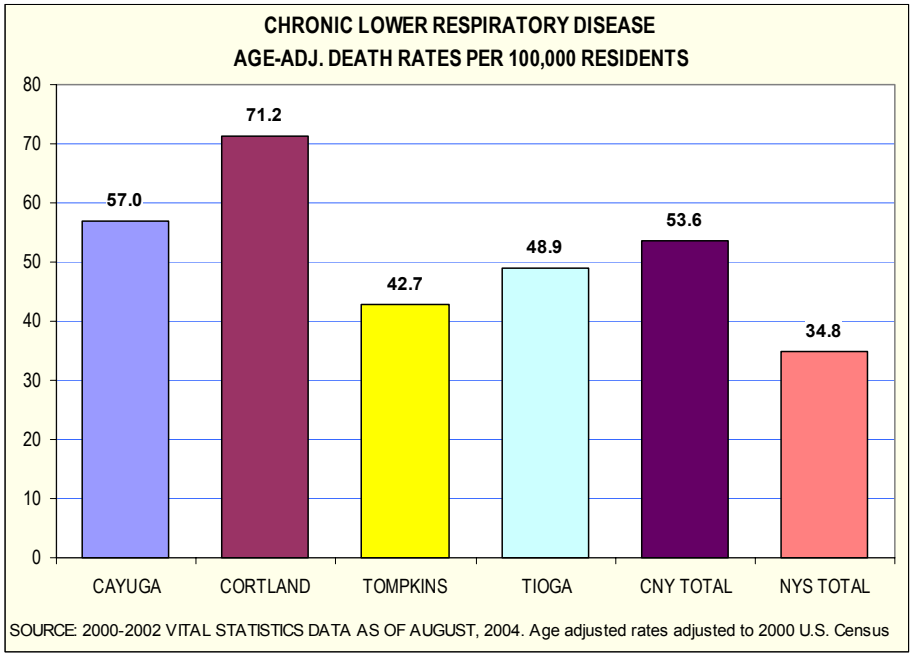

Figure 172 — Chronic lower respiratory disease mortality, 10-year trend

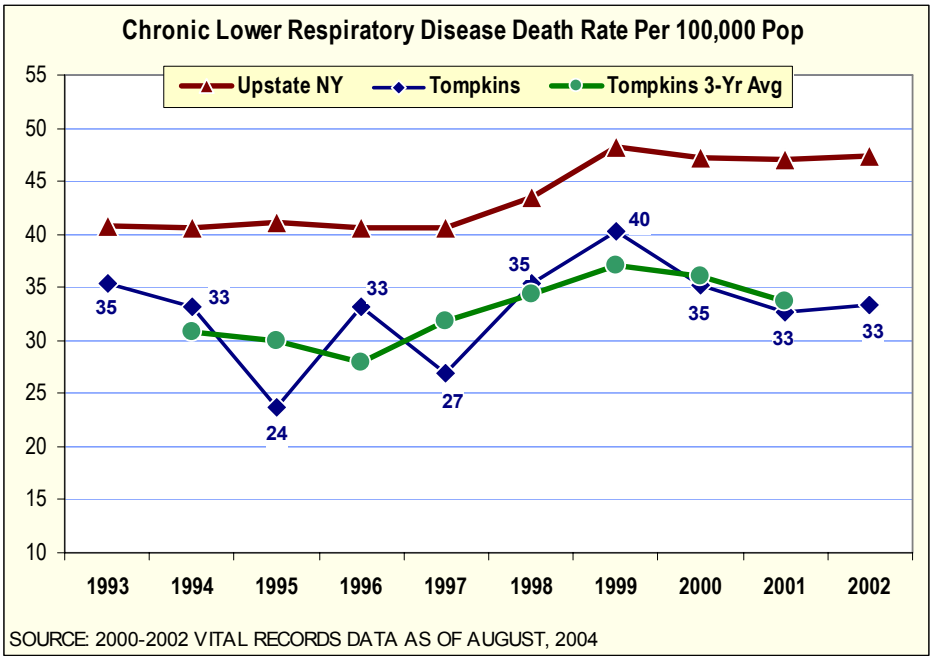

Figure 173 — COPD hospitalizations by age, regional comparison

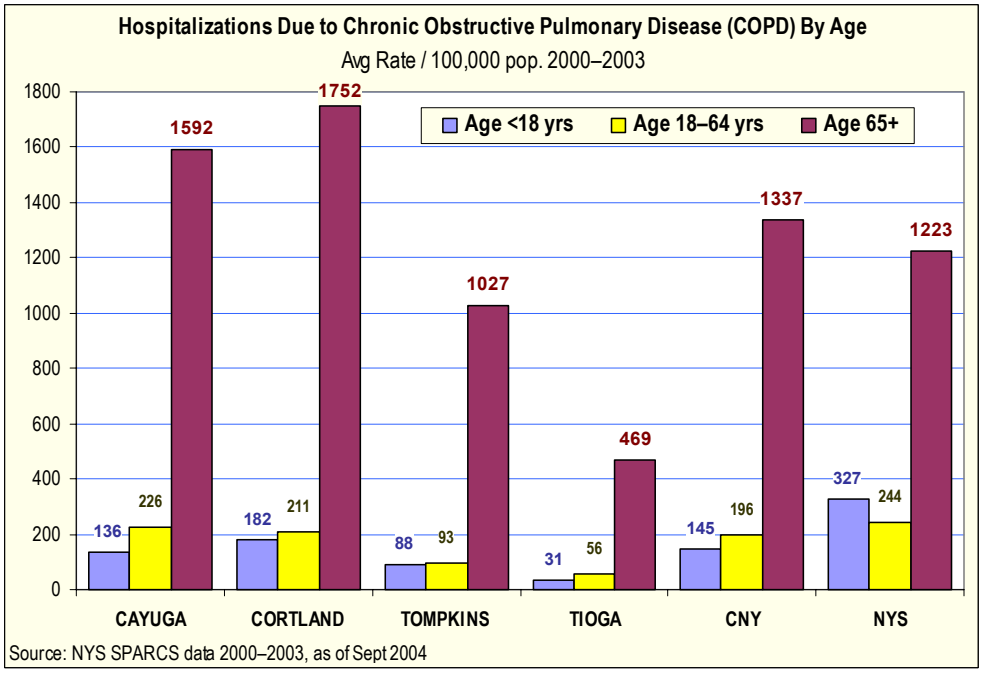

Figure 174 — Asthma mortality, age adjusted rates, regional comparison

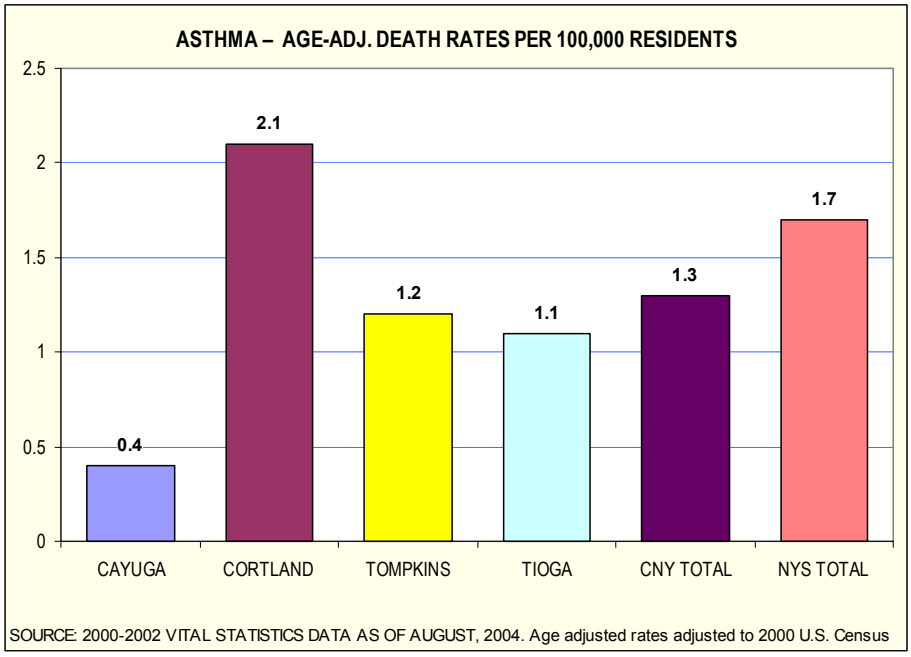

Figure 175 — Asthma mortality, crude rates, regional comparison

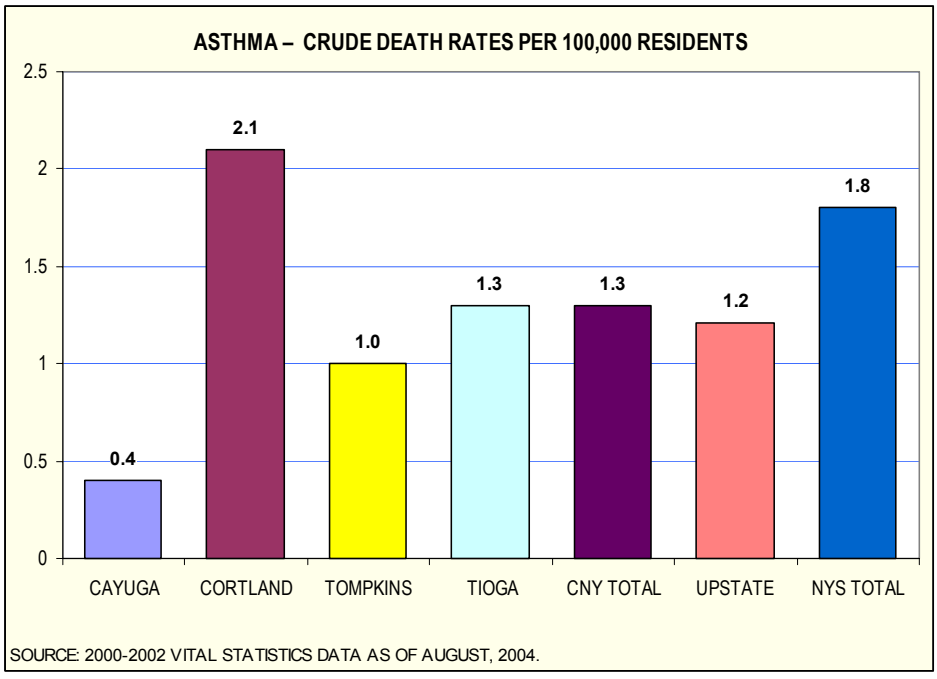

Figure 176 — Asthma mortality, 10-year trend

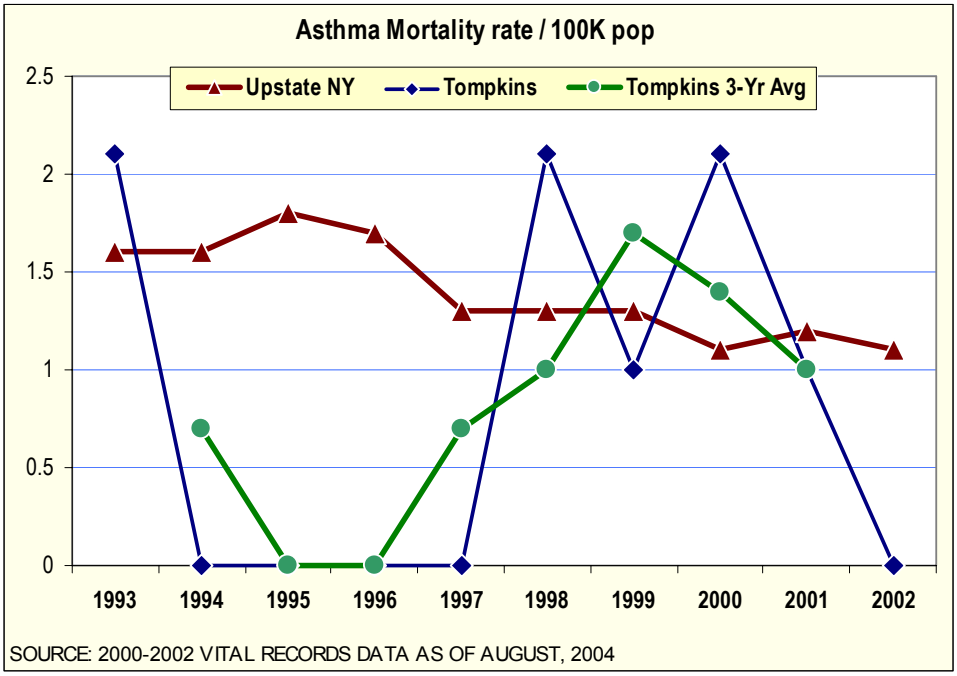

Figure 177 — Ever had Asthma diagnosis (self-report), regional comparison

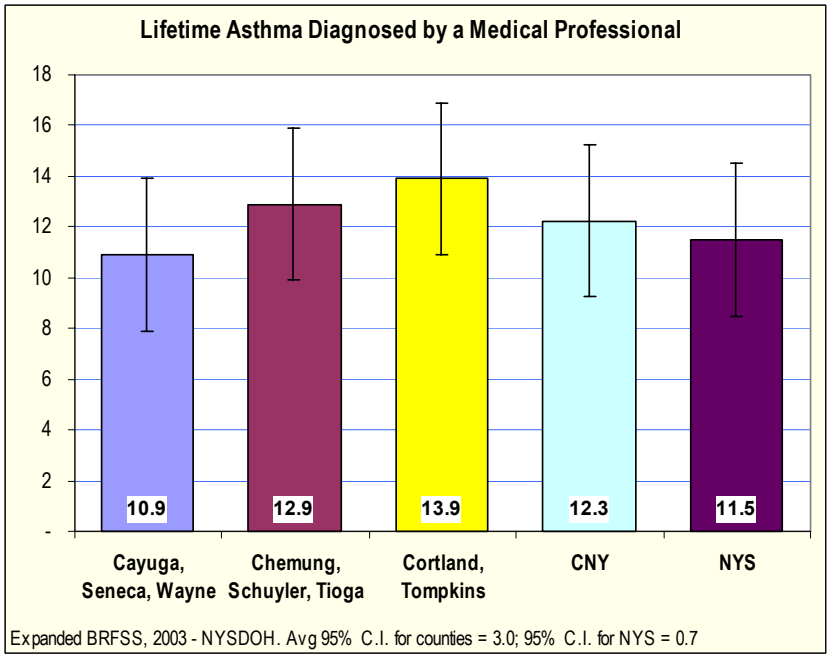

Figure 178 — Ever had Asthma diagnosis (self-report), Cortland–Tompkins demographic comparison

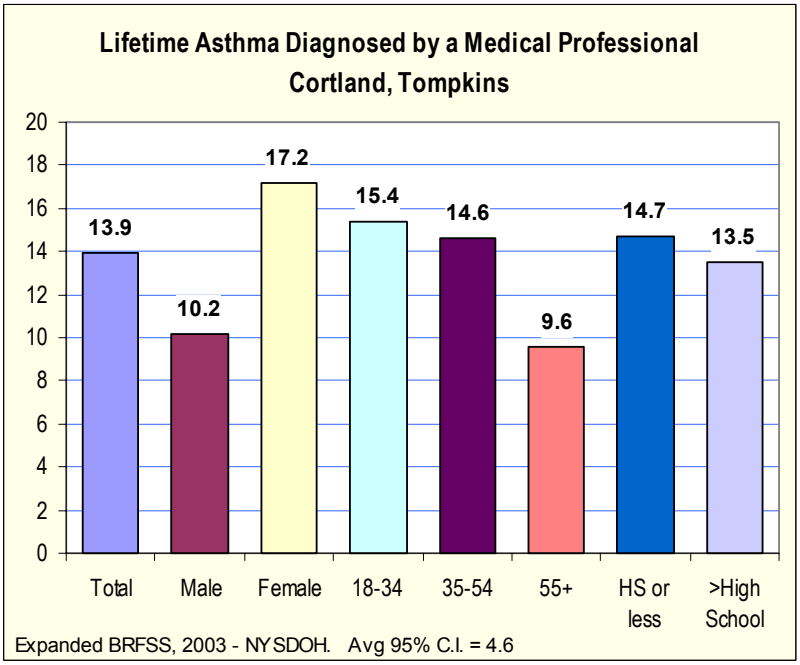

Figure 179 — Current Asthma diagnosis (self-report), regional comparison

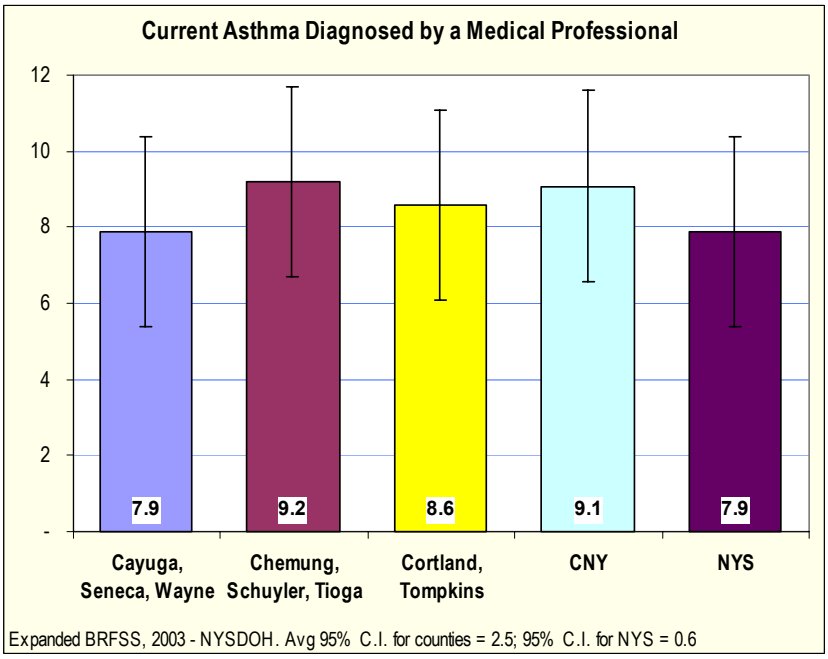

Figure 180 — Current Asthma diagnosis (self-report), Cortland–Tompkins demographic comparison

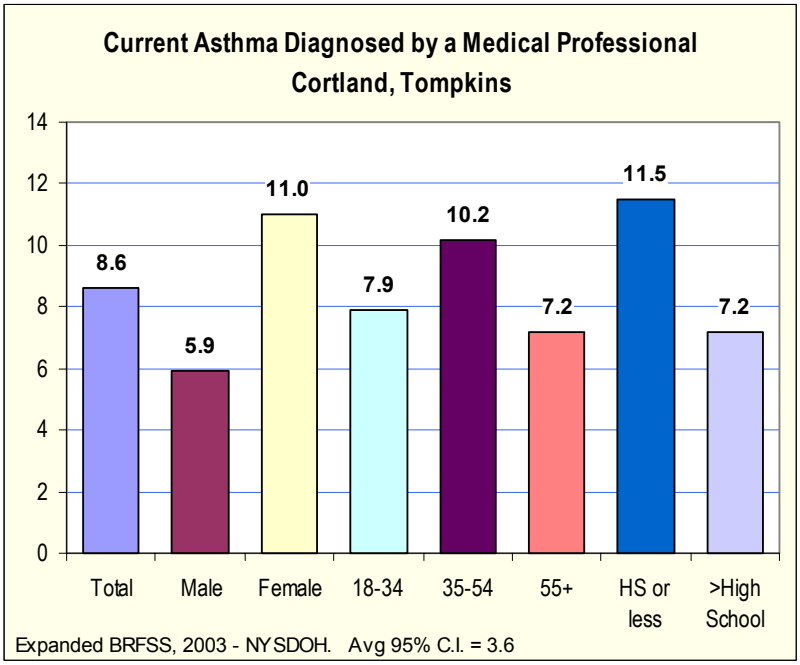

Figure 181 — Asthma hospitalizations, regional comparison

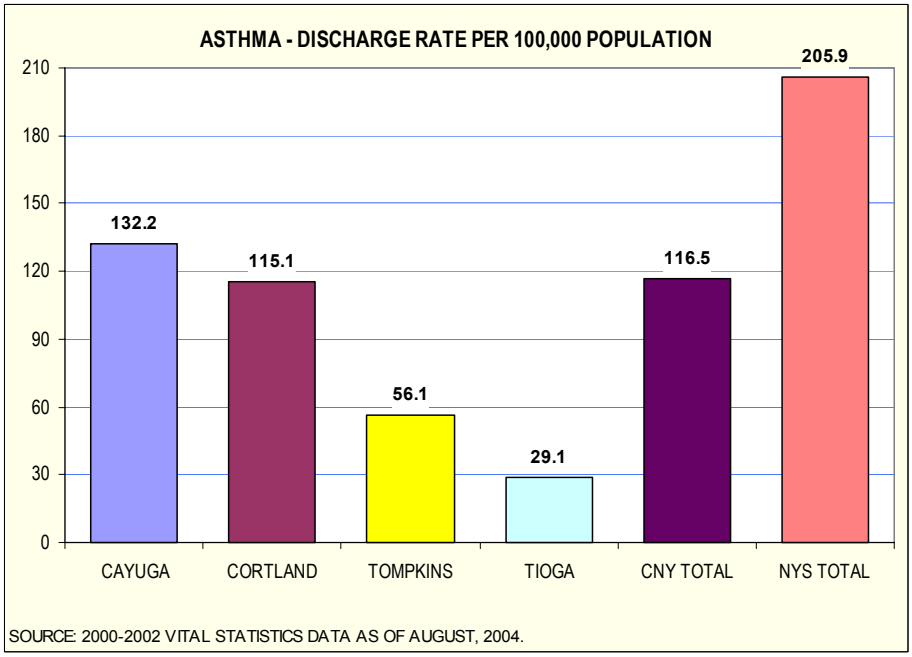

Figure 182 — Asthma hospitalizations, 10-year trend

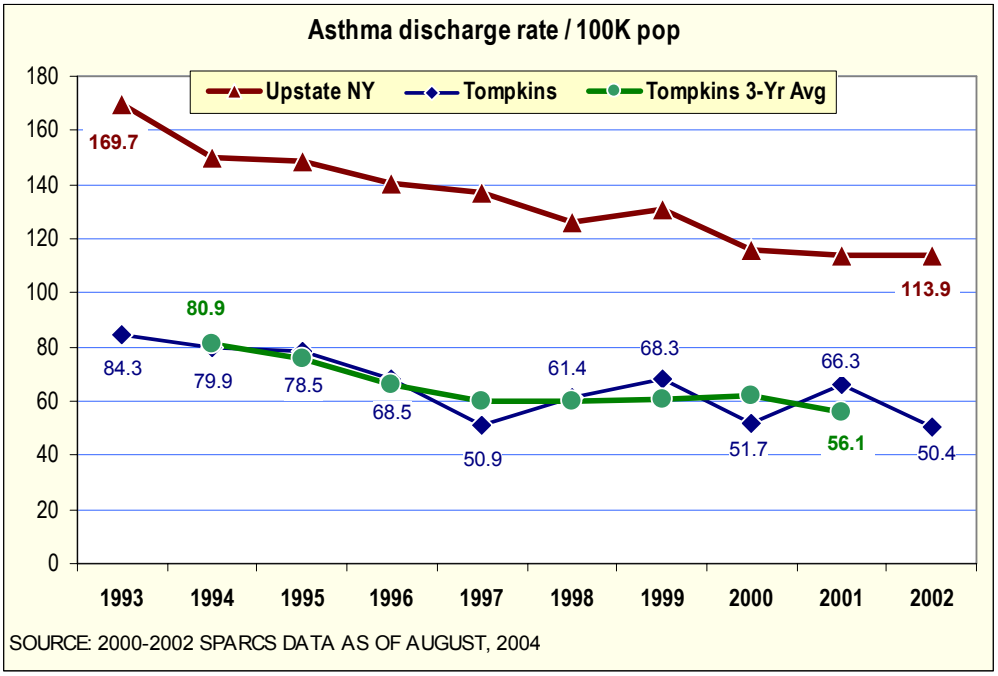

Figure 183 — Asthma hospitalizations, comparison by age, Tompkins

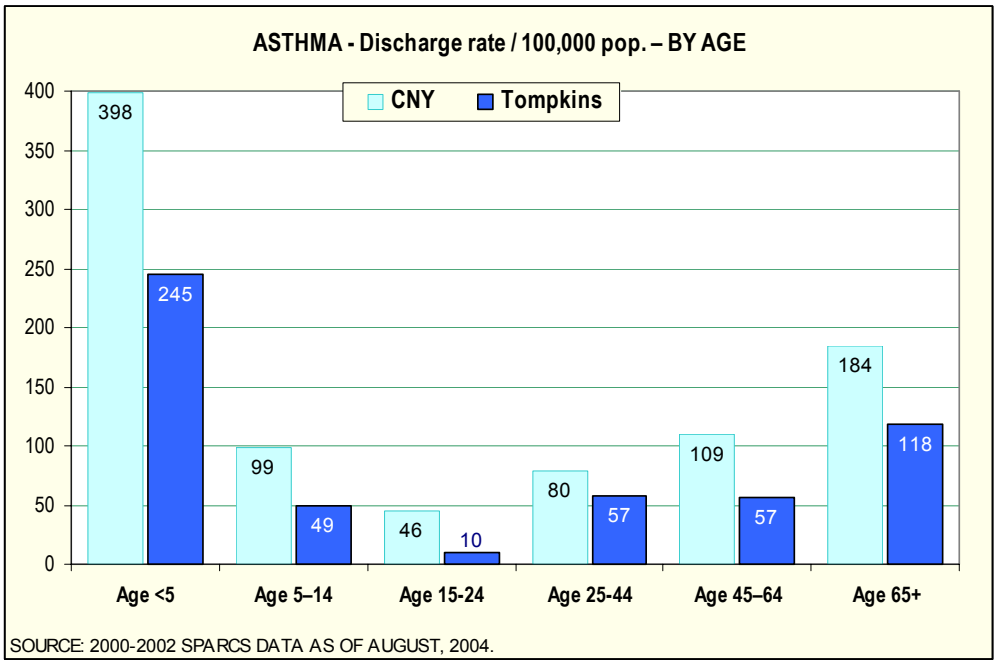

Figure 184 — Asthma hospitalizations by age, regional comparison

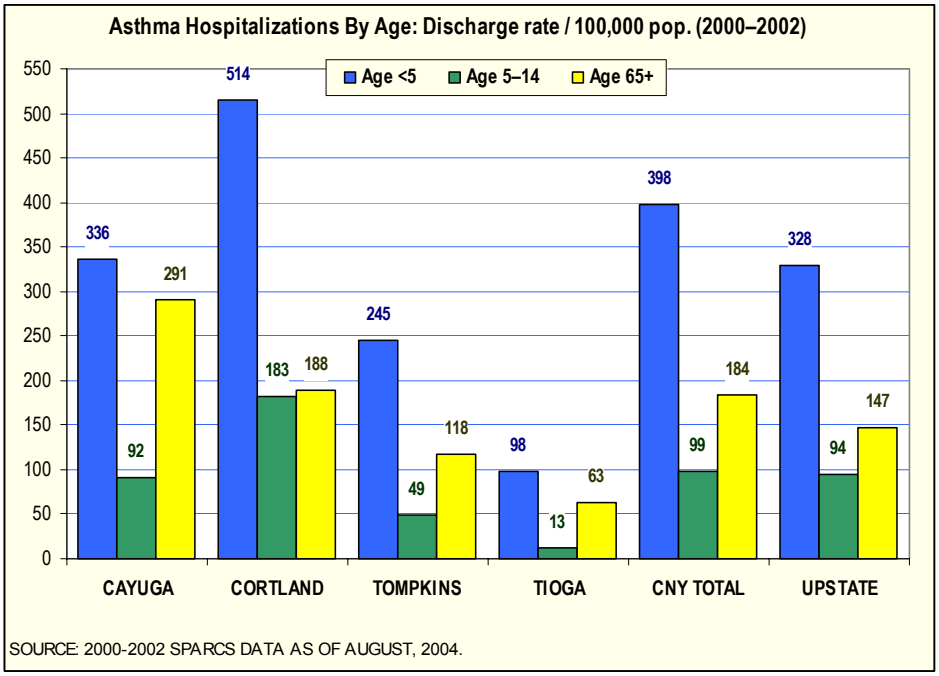

Figure 185 — Asthma hospitalizations by age, statewide comparison

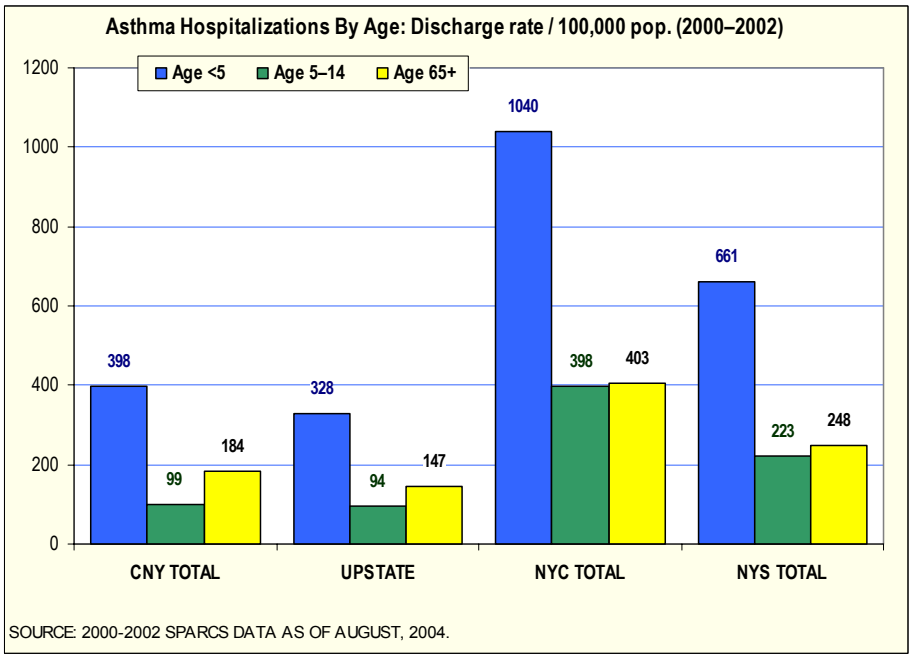

Figure 186 — Asthma hospitalizations age <5, 10-year trend

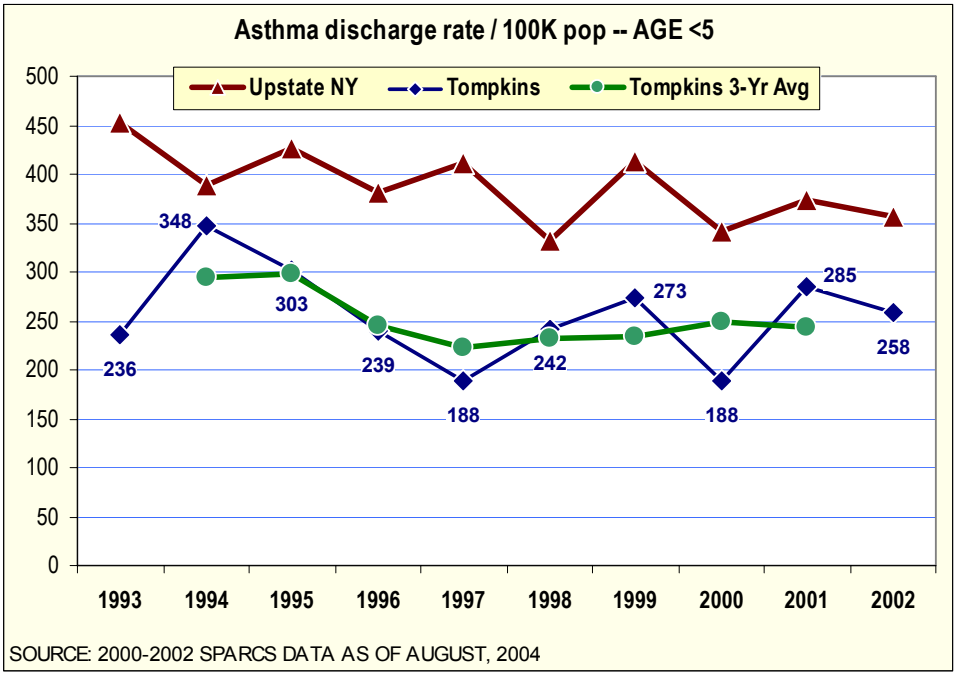

Figure 187 — Asthma hospitalizations age 5–14, 10-year trend

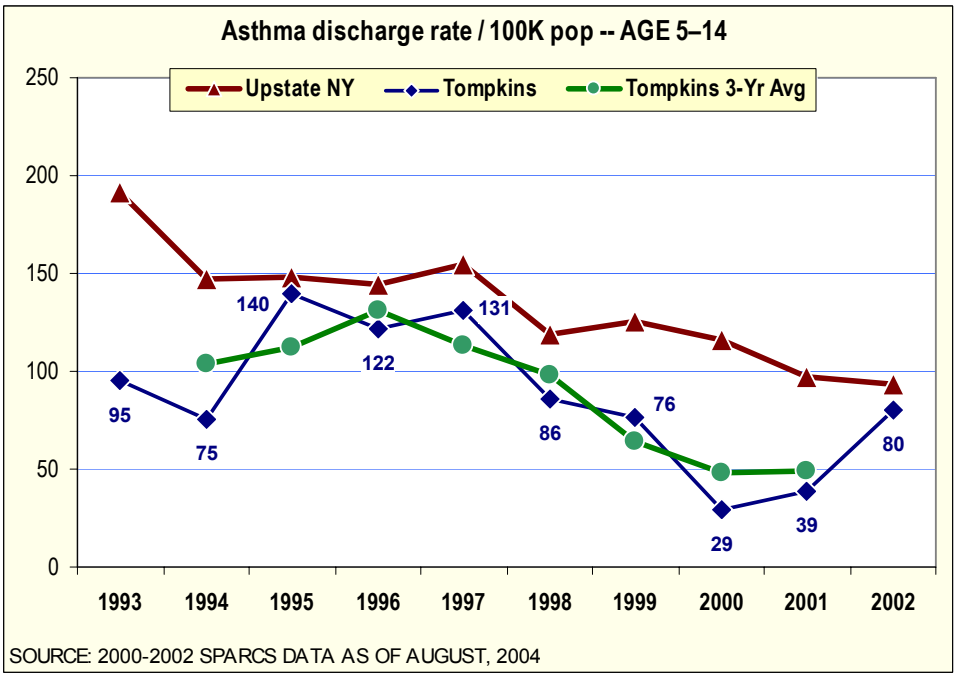

Figure 188 — Asthma hospitalizations age 15–24, 10-year trend

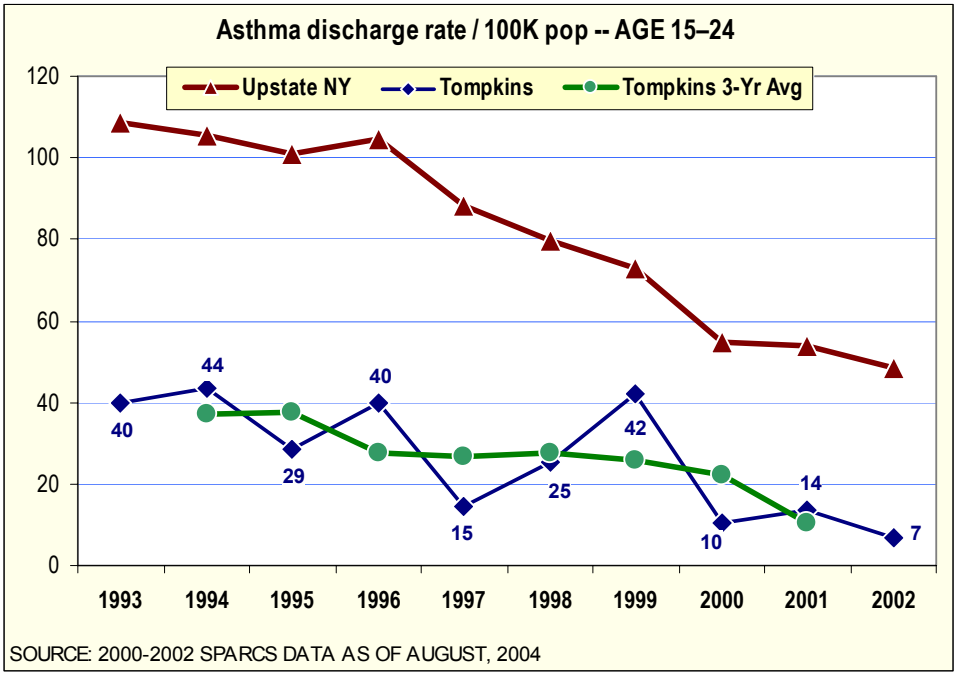

Figure 189 — Asthma hospitalizations age 25–44, 10-year trend

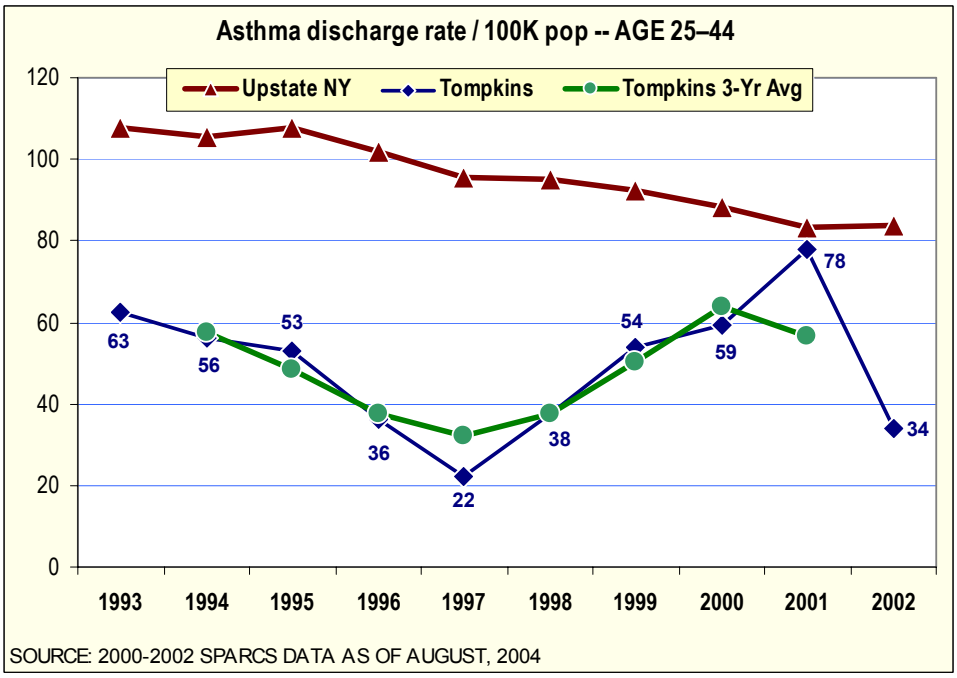

Figure 190 — Asthma hospitalizations age 45–64, 10-year trend

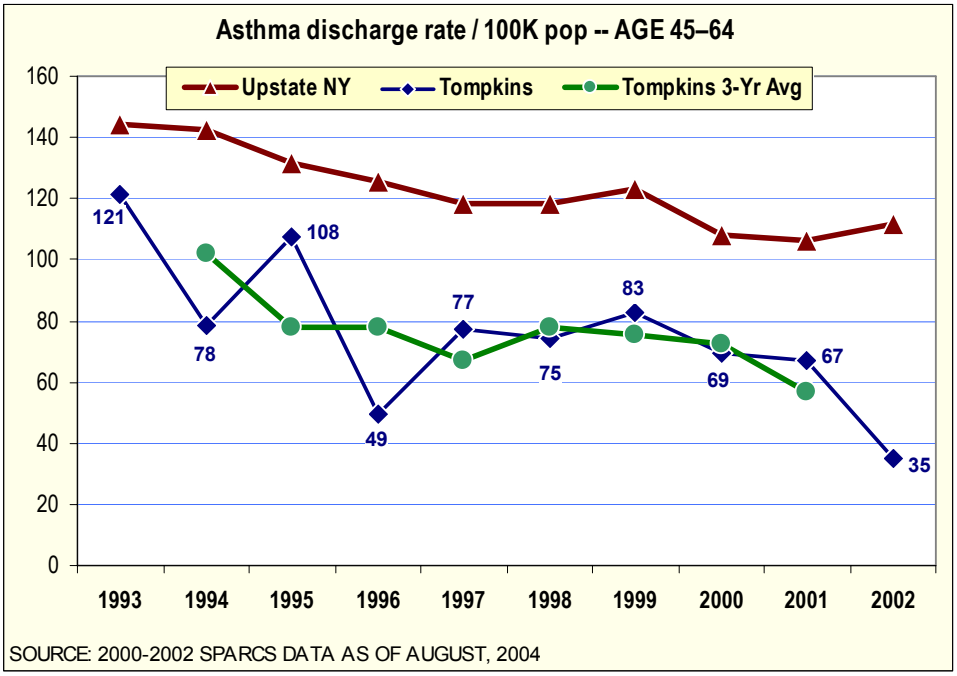

Figure 191 — Asthma hospitalizations age 65+, 10-year trend