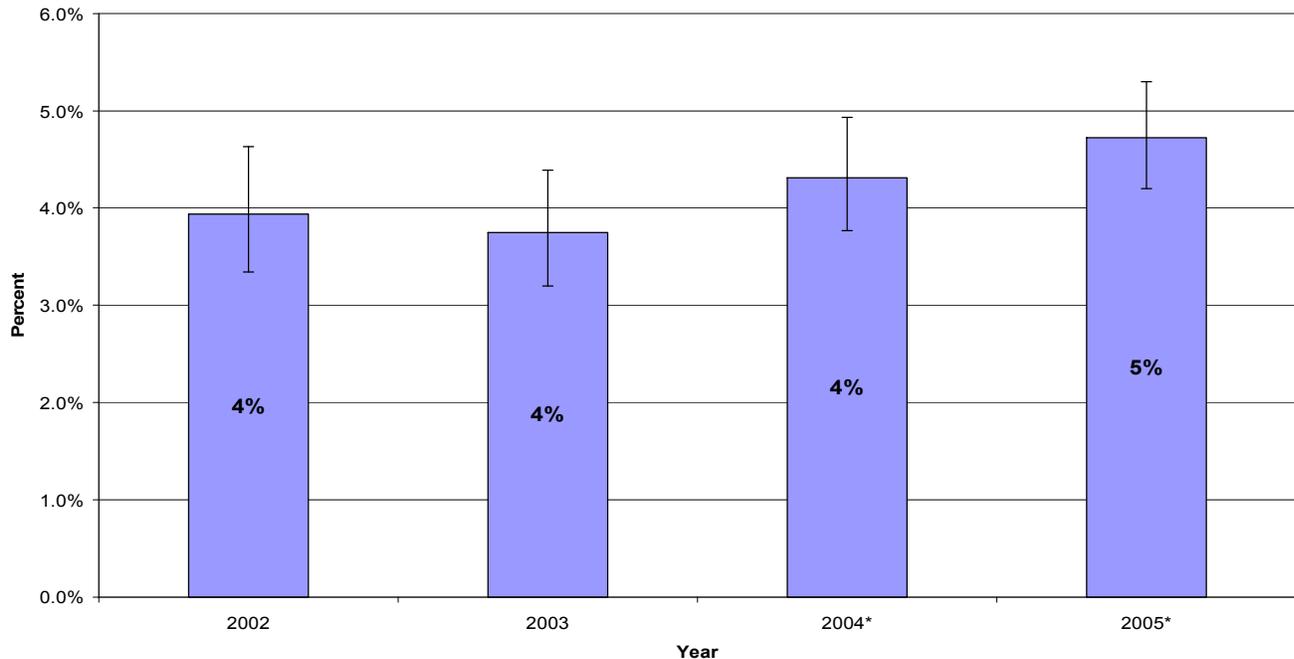


COPD Data Analysis Charts

-Chronic Obstructive Pulmonary Disease (COPD)

Figure 1: Prevalence of COPD
Vermont Adult Residents, BRFSS 2002 - 2005*
Age-Adjusted U.S. 2000 Population

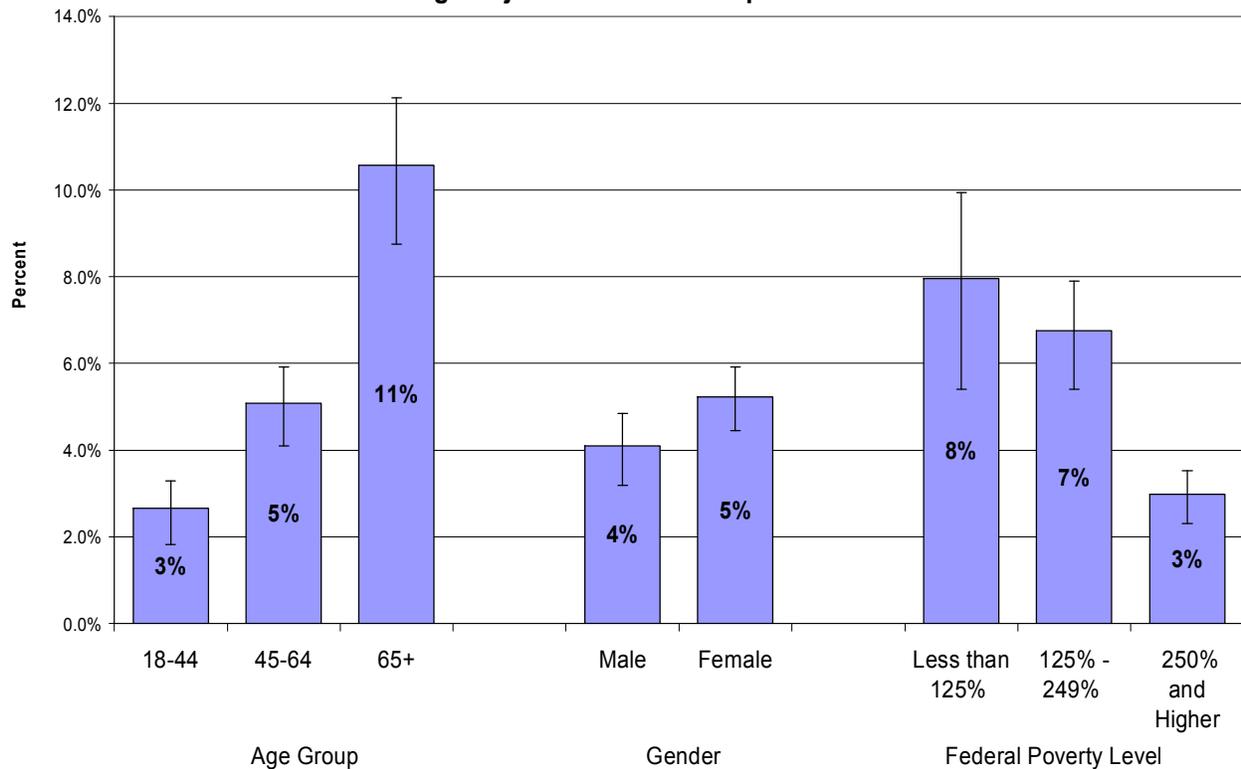


In 2005, after adjusting for age, more than 21,000 or 4.7 percent of Vermont adults reported having ever been diagnosed with COPD. This was slightly higher than that reported in 2004 (4.3 percent), though this difference was not statistically significant. The question used to assess COPD status was changed in 2004, making it difficult to compare data collected prior to that time with that from 2004 and 2005.

*Note the question used to assess COPD status changed beginning in 2004.

**Error bars depict 95% confidence intervals.

**Figure 2: Prevalence of COPD by Demographic Group
Vermont Adult Residents, BRFSS 2005
Age Adjusted U.S. 2000 Population**



A COPD diagnosis was reported more frequently among older Vermont adults, females, and those of lower financial means in 2005.

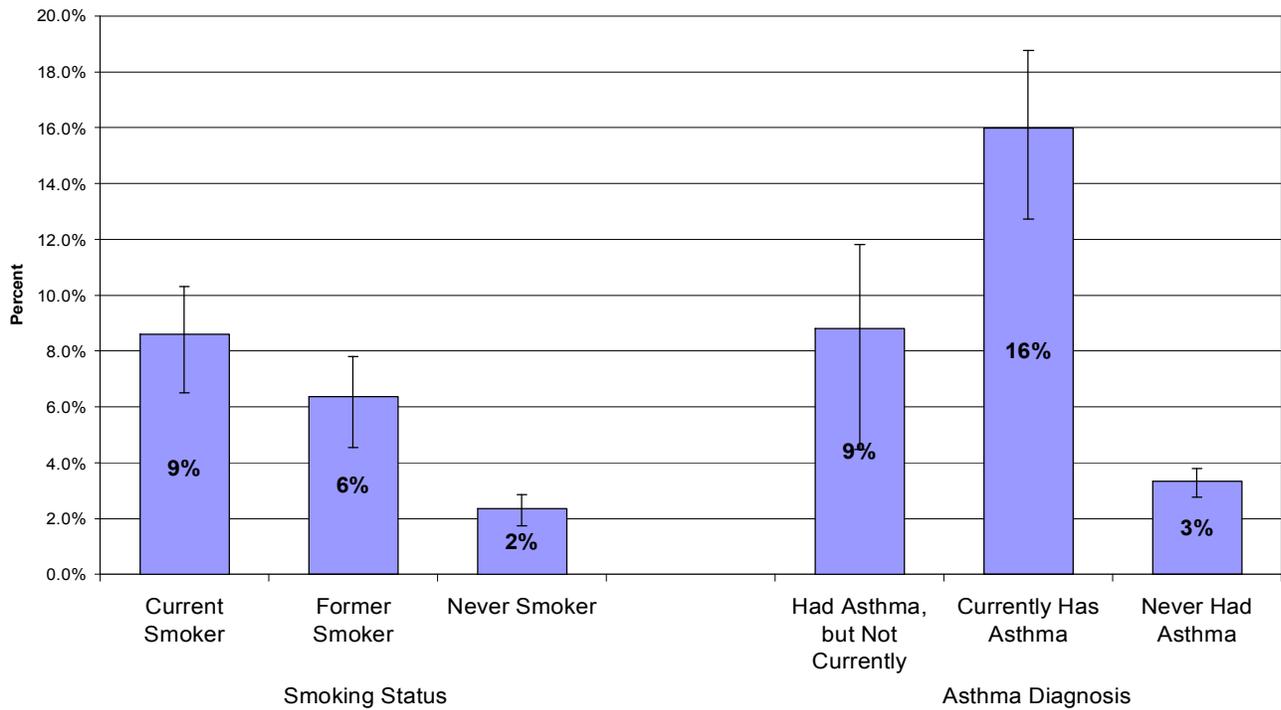
The prevalence of COPD increased significantly across each of the three age groups, 18-44, 45-64 and 65 and older. This was expected, as the development of COPD is slow and longer risk factor exposures are known to increase the chances of disease development, thus causing it to be primarily a disease of older people.

While COPD occurs among both men and women, in the past few decades the occurrence of and death from COPD has sharply increased among women. This increase is largely due to increases in smoking prevalence among women since the 1940s. In 2005, 5.2 percent of Vermont adult females reported ever being diagnosed with COPD, compared with only 4.1 percent of males. This difference was not statistically significant.

For these analyses, financial means was based upon federal poverty level (FPL), a measure that takes into account both household income and household size. Those living at less than 125 percent and between 125 percent and 249 percent FPL reported ever being diagnosed with COPD significantly more often than those at 250 percent FPL or higher. Households living at less than 125 percent FPL reported a higher rate of COPD than those between 125 and 249 percent FPL, though this difference was not significant. These differences are likely influenced by environmental factors, such as smoking rate (see Figure 4), rather than strictly the result of financial means.

*Error bars depict 95% confidence intervals.

**Figure 3: Prevalence of COPD by Risk Factor
Vermont Adult Residents, BRFSS 2005
Age-Adjusted U.S. 2000 Population**

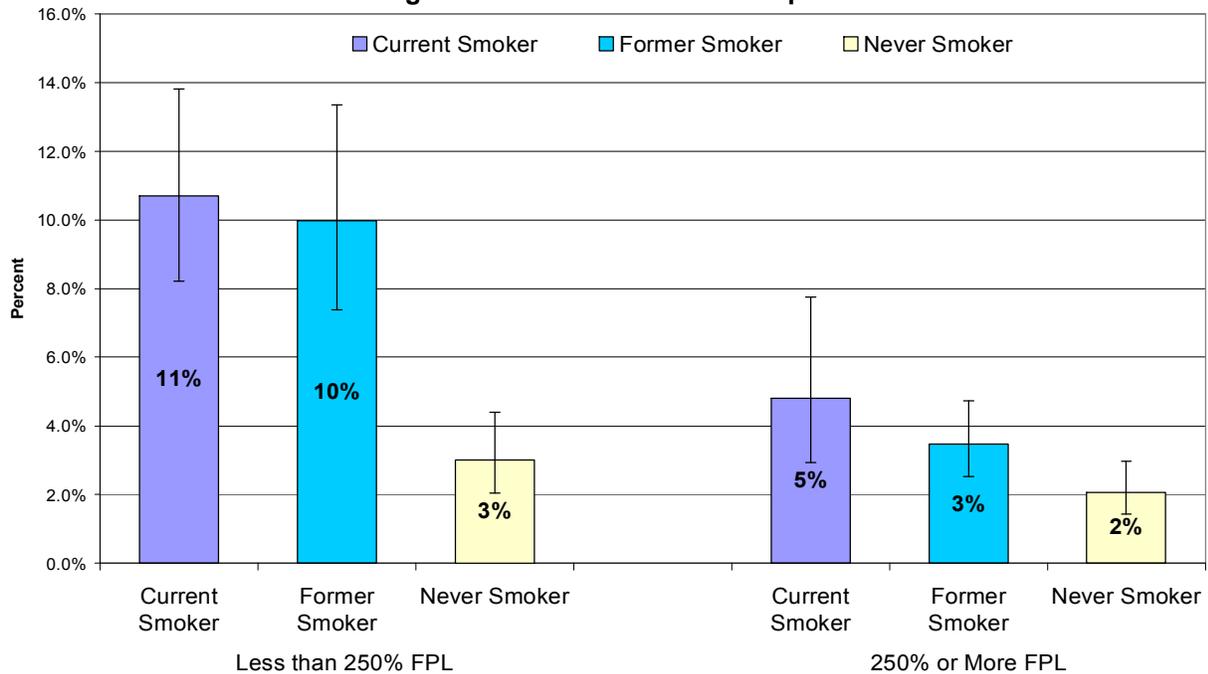


Between 80 and 90 percent of COPD is due to tobacco use. This is evident when looking at COPD diagnosis by smoking status among Vermont adults. Nearly nine percent of current smokers reported ever being diagnosed with COPD; 6.4 percent of former smokers reported the same. Never smokers reported a COPD diagnosis 2.4 percent of the time; significantly less than among either of the other groups. The decrease in COPD prevalence between current smokers and former smokers shows that the risk of disease can be reduced by quitting smoking.

Distinguishing between asthma and COPD is often difficult and can result in the misdiagnosis of both diseases. Furthermore, asthma has also been shown to lead to the development of COPD. The overlap between diseases is illustrated when looking at 2005 Vermont data. Less than four percent of those never diagnosed with asthma reported ever being told they had COPD. This increased significantly to nearly nine percent among those previously diagnosed with, but currently without, asthma, and again to 16 percent among those currently with asthma. Further analysis of asthma and COPD diagnoses is presented in figure 5.

*Error bars depict 95% confidence intervals.

**Figure 4: Prevalence of COPD by Federal Poverty Level* (FPL) and Smoking Status
BRFSS 2004-2005
Age Standardized U.S. 2000 Population**



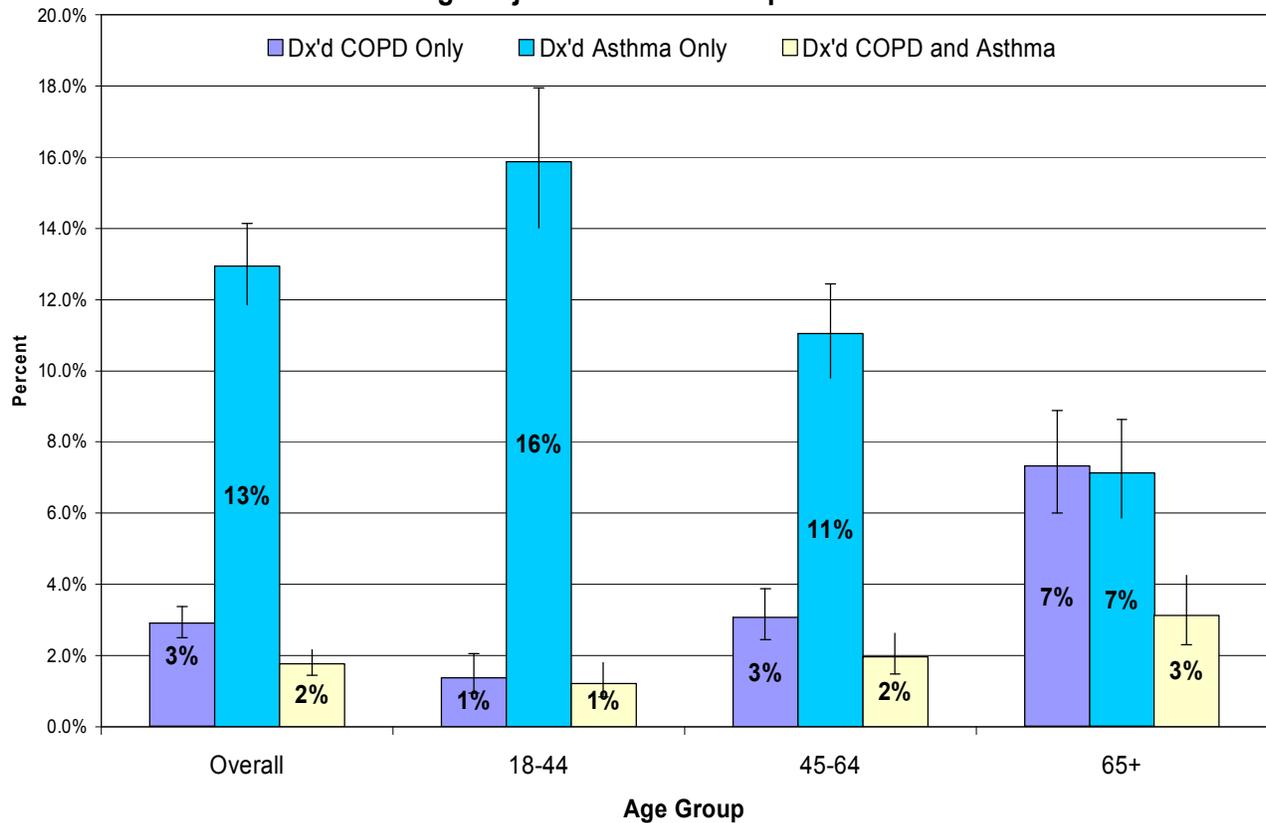
Regardless of a household's Federal Poverty Level (FPL), COPD occurs at higher rates among current smokers, followed by former smokers and never smokers. However, when comparing data for those of lower FPL to those of higher FPL, there are differences in the occurrence of COPD. Current smokers living at less than 250 percent FPL reported a COPD diagnosis twice as often as those living at 250 percent FPL or higher. Similar patterns exist for former smokers and never smokers.

Higher rates of COPD among current and former smokers of lower FPL are likely at least partially the result of higher smoking rates in general and higher consumption of cigarettes per smoker in this population. The higher rate of COPD among never smokers living at less than 250 percent FPL or lower compared with those living at an FPL of 250 percent or higher is more difficult to explain. It is possible this difference is also related to higher smoking rates in the lower FPL population, as second hand smoke exposure can also lead to the development of COPD. It is also possible that the higher rate in this population may be linked to the type of work people are employed at or some other environmental factor.

* Federal Poverty Level (FPL) is a measure of poverty that incorporates both household income and household size.

** Error bars depict 95% confidence intervals.

Figure 5: Prevalence of COPD and Asthma, Alone and in Combination by Age Group
BRFSS 2005
Age Adjusted U.S. 2000 Population



As mentioned in figure 3, distinguishing between COPD and asthma can be difficult and can lead to the misdiagnosis of both diseases. COPD is also linked with asthma in that asthma can lead to the development of COPD over time.

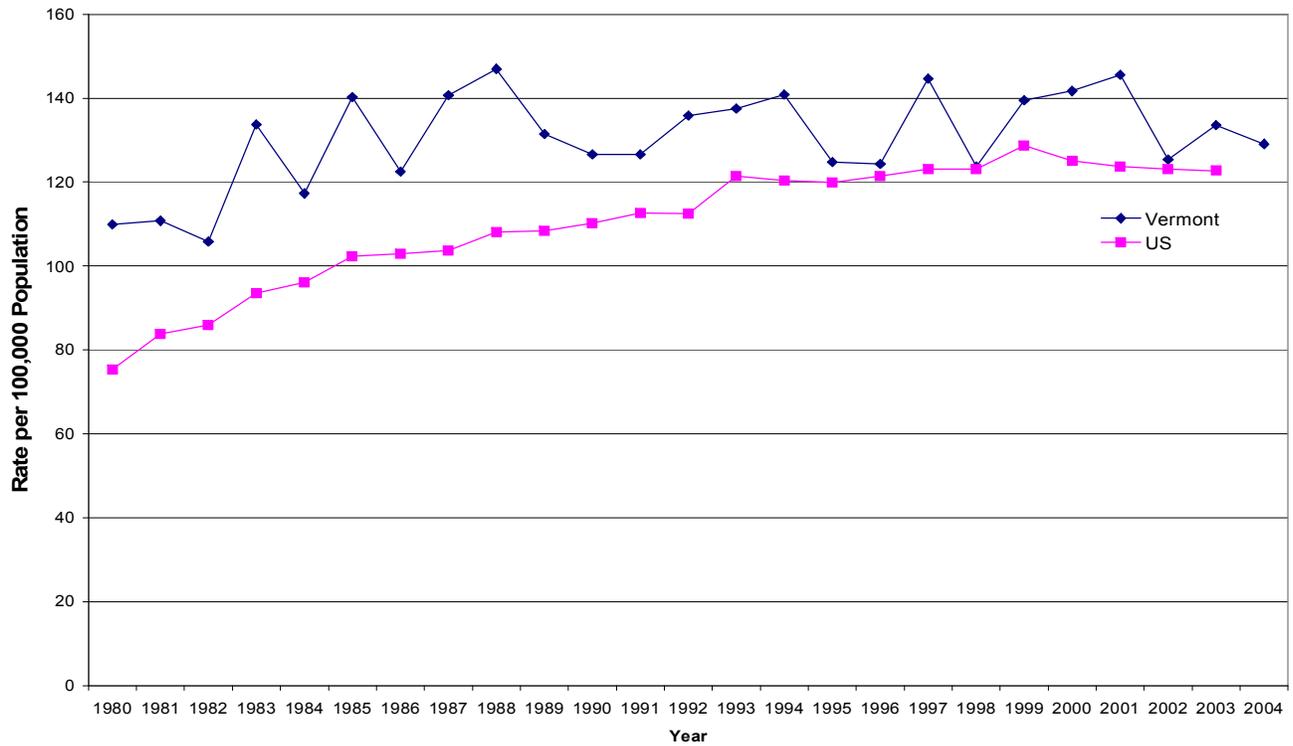
Figure 5 looks at Vermont adults, as a whole and by age group, by their diagnoses of both asthma and COPD. In general, 13 percent reported asthma only, close to three percent reported COPD only and nearly two percent reported both COPD and asthma.

Vermont adults ages 18-44 are significantly more likely to have only a diagnosis of asthma (15.9%) than diagnoses of only COPD (1.4%) or both COPD and asthma (1.2%). This trend decreases as age increases, until among those 65 and older the proportion of those with only a diagnosis of COPD (7.3%) equals that among those with only a diagnosis of asthma (7.1%). The proportion of the population with both a COPD and an asthma diagnosis increases with increased age.

These are not unexpected findings, given that COPD is mostly a disease of older people and asthma is frequently diagnosed among younger people. Older populations would naturally include higher proportions of those diagnosed with COPD.

*Error bars depict 95% confidence intervals.

Figure 6: COPD Mortality
Rate per 100,000 Adults Aged 45 years or Older*



This chart illustrates two main points. First the rate of COPD mortality in Vermont is consistently higher than that of the United States as a whole. This margin of difference, however, has decreased in the past several years, largely due to an increasing U.S. COPD mortality rate. The second point is that with a COPD mortality rate of 129 per 100,000 adult Vermont residents ages 45 or older in 2004, a substantial reduction in COPD mortality needs to be made if Vermont is to attain the Health Vermonters goal of 60 deaths per 100,000 Vermont residents ages 45 and older in the year 2010.