

Indicator 9: Pneumoconiosis Hospitalizations

Pneumoconiosis Hospitalizations Significance

Pneumoconioses are lung diseases caused by dust exposure in the workplace. Pneumoconioses include silicosis, asbestosis, coal workers' pneumoconiosis and pneumoconiosis due to exposure to a variety of other mineral dusts including talc, aluminum, bauxite and graphite. Complications of pneumoconiosis that may cause hospitalizations include respiratory infections, tuberculosis, chronic bronchitis, emphysema, lung cancer, pleuritis, progressive systemic sclerosis, renal disease and respiratory failure. Controlling and monitoring exposure to dust and ongoing medical surveillance are important to prevent pneumoconiosis.

Methods

Colorado hospital discharge data are reported through the Colorado Hospital Association to the Colorado Department of Public Health and Environment. The discharge database contains all inpatient and ambulatory patient surgery data of member hospitals. Data were collected from all Colorado discharge data records if the ICD-9-CM codes 500-505 were present in any of the 15 diagnosis fields for persons 15 years or older in Colorado. Rates were calculated using Colorado population estimates from the U.S. Census Bureau as the denominator.

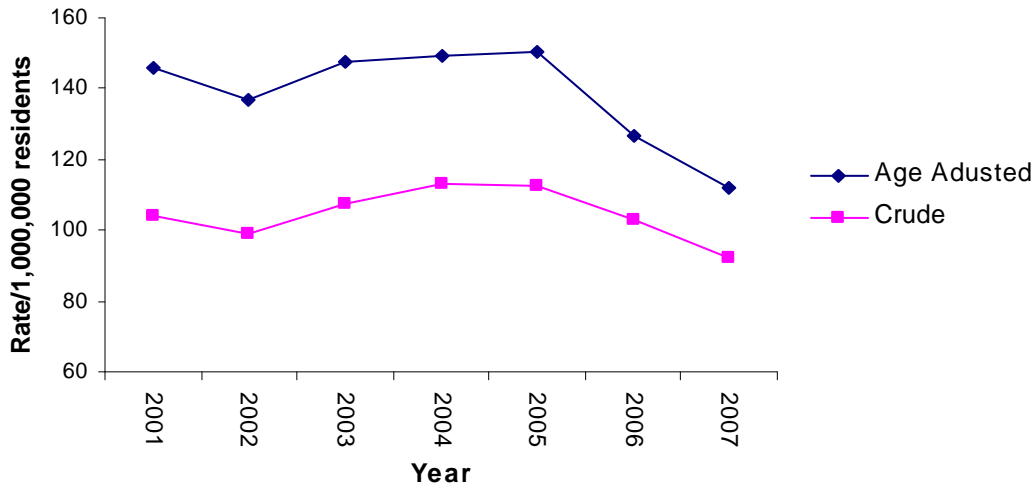
Results

Table 9.1 Number and Annual Rate Of Hospitalizations From or With Pneumoconiosis, Colorado, 2001-2007

| | Number of Pneumoconiosis Hospitalizations | Crude Rate per 1,000,000 Residents | Age Standardized Rate per 1,000,000 Residents |
|----------------|--|---|--|
| 2001 | 363 | 103.9 | 145.7 |
| 2002 | 353 | 99.2 | 136.6 |
| 2003 | 387 | 107.5 | 147.3 |
| 2004 | 413 | 113.1 | 149.4 |
| 2005 | 418 | 112.6 | 150.7 |
| 2006 | 389 | 102.7 | 126.8 |
| 2007 | 356 | 92 | 111.8 |
| Average | 382.7 | 104.4 | 138.3 |

Source: Colorado hospital discharge data (numerator); State population estimates from the US Census Bureau (denominator); Year 2000 US Standard population (for age-standardization)

Figure 9.1 Crude and age standardized hospitalization rates from or with Pneumoconiosis per 1,000,000 residents, Colorado 2000-2007



Source: Colorado hospital discharge data (numerator); State population estimates from the US Census Bureau (denominator); Year 2000 US Standard population (for age-standardization)

- Between 2001 and 2007, on average, 382.7 Colorado residents were hospitalized with or from pneumoconiosis. (Table 9.1 and Figure 9.1)
- On average between 2001 and 2007, approximately 138 out of every one-million Colorado residents were hospitalized from or with pneumoconiosis. (Figure 9.1- age standardized rates)
- The majority of hospitalizations from pneumoconiosis in Colorado were attributable to asbestosis and coal worker’s pneumoconiosis.
- Between 2005 and 2007, the number of hospitalizations and the hospitalization rates decreased in Colorado. (Table 9.1 and Figure 9.1)

Data Sources

- Colorado hospital discharge data (numerator)
- State population estimates from the US Census Bureau (denominator)
- Year 2000 US Standard population (for age-standardization)

Limitations

- The estimated incidence of hospitalizations does not necessarily represent current exposures or diseases. Pneumoconiosis occurs many years after a worker's first exposure to hazardous dust. The latency from time of exposure to detection of disease averages 20 to 40 years. Therefore, rates in 2001 to 2007 may reflect past exposures from the 1960s to present.
- Discharge summaries may vary, including the number of diagnoses listed and who completed the summary, and as a result may not include pneumoconiosis as the contributing cause of hospitalizations.
- Not all cases of pneumoconiosis may be hospitalized for pneumoconiosis-related complications because of insurance coverage and differences in physician practices. Typically, only a small number of the most severe cases are hospitalized.
- For these reasons, hospitalization rates most likely underestimate the true burden of pneumoconiosis among workers.

Recommendations

- Further characterize the details of hospitalizations from or with pneumoconiosis, including age, gender, race/ethnicity and zip code.
- Define hospitalization patterns to guide prevention efforts.
- Identify data sources that estimate the rate of outpatient (non-hospitalized) cases of pneumoconiosis.