women, patients should be screened for signs and symptoms of febrile respiratory illness at the initial point of contact, and these patients should be promptly segregated and assessed. Outpatient clinical settings and labor and delivery units should develop and implement procedures for handling patients with respiratory illness and friends or family members who might accompany them. Pregnant women who are in close contact with a person who has a confirmed, probable, or suspected case should receive a 10-day course of chemoprophylaxis with zanamivir or oseltamivir. For chemoprophylaxis in pregnant patients, a preferred anti-influenza medication has not been determined. Although zanamivir might have the benefit of more limited systemic absorption,[9] respiratory symptoms such as coughing or severe nasal congestion might limit its usefulness because of its inhaled route of administration. The pregnant physician caring for patient C began chemoprophylaxis soon after exposure.

Because of the increased risk for severe complications, the public health response to outbreaks of novel influenza A (H1N1) virus should include considerations specific to pregnant women. Interim guidance on issues specific to pregnant women and the novel influenza A (H1N1) virus is available at http://www.cdc.gov/h1n1flu/clinician_pregnant.htm. Additional information regarding novel influenza A (H1N1) virus is available at http://www.cdc.gov/h1n1flu. Clinicians should report cases of novel influenza A (H1N1) virus infection in pregnant women to their state or local health departments or CDC.

Acknowledgments

The findings in this report are based, in part, on contributions by S Munday, MD, M Rios, MD, Imperial County Public Health Dept; P Kammerer, MD, C Myers, PhD, and T Hawksworth, Naval Health Research Center, San Diego, California.

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*Case definitions available at http://www.cdc.gov/h1n1flu/casedef.htm.
†Guidance available at http://www.cdc.gov/h1n1flu/clinician_pregnant.htm.

Errata: Vol. 58, No. 18

MMWR. 2009;58:541

IN THE REPORT, "NOVEL INFLUENZA A (H1N1) Virus Infections in Three Pregnant Women—United States, April-May 2009," on page [23], the second and third sentences in the first complete paragraph should read as follows: "The specimen was forwarded to the Virus Surveillance and Diagnostic Branch Laboratory, Influenza Division, CDC, where it **could not be confirmed** as novel influenza A (H1N1) virus. On April 30, a repeat nasopharyngeal specimen **and sputum specimen were collected that were both** positive by rRT-PCR for novel influenza A (H1N1) virus at CDC."

Malignant Mesothelioma Mortality—United States, 1999-2005

MMWR. 2009;58:393-396

2 figures, 1 table omitted

MALIGNANT MESOTHELIOMA IS A FATAL cancer primarily associated with exposure to asbestos. The latency period between first exposure to asbestos and clinical disease usually is 20-40 years.[1] Although asbestos is no longer mined in the United States, the mineral is still imported, and a substantial amount of asbestos remaining in buildings eventually will be removed, either during remediation or demolition. Currently, an estimated 1.3 million construction and general industry workers potentially are being exposed to asbestos.[2] To characterize mortality attributed to mesothelioma, CDC's National Institute for Occupational Safety and Health (NIOSH) analyzed annual multiple-cause-of-death records for 1999-2005, the most recent years for which complete data are available.* For those years, a total of 18,068 deaths of persons with malignant mesothelioma were reported, increasing from 2,482 deaths in 1999 to 2,704 in 2005, but the annual death rate was stable (14.1 per million in 1999 and 14.0 in 2005). Maintenance, renovation, or demolition activities that might disturb asbestos should be performed with precautions that sufficiently prevent exposures for workers and the public. In addition, physicians should document the occupational history of all suspected and confirmed mesothelioma cases.

Asbestos was used in a wide variety of construction and manufacturing applications through most of the 20th century. In the United States, asbestos use peaked at 803,000 metric tons in 1973 and then declined to approximately 1,700 metric tons in 2007.[3]

For this report, malignant mesothelioma deaths were identified for 1999-2005 from death certificates and included any deaths for which *International Classification of Diseases, 10th Revision* (ICD-10) codes† for malignant mesothelioma were listed in the multiple-cause-of-death mortality data entity axis.‡ Because mesothelioma predominantly is associated with occupational exposure and has a long latency, the analysis was restricted to deaths of persons aged ≥25 years. The annual death rate per 1 million persons aged ≥25 years was calculated using the July 1 population estimates for each year provided by the U.S. Census Bureau. Overall death rates were calculated based on the 2002 census population.

During 1999-2005, a total of 18,068 malignant mesothelioma deaths were reported in the United States; 14,591 (80.8%) occurred among males and 17,180 (95.1%) among whites. Mesothelioma deaths were classified as mesothelioma of pleura (1,572; 8.7%), peritoneum (657; 3.6%), other anatomical site (2,605; 14.4%), and unspecified anatomical site (13,454; 74.5%).§ Mortality increased with age, with the greatest number of decedents aged ≥75 years; 311 deaths (1.7%) occurred in persons aged ≤44 years. From 1999 to 2005, the total number of malignant mesothelioma deaths increased 8.9%, from 2,482

in 1999 to 2,704 in 2005, but the annual death rate was stable (14.1 per million population in 1999 versus 14.0 in 2005). The death rate for males was 4.5 times that for females (23.2 versus 5.1 per million). During 1999-2005, the state death rate was greater than the national rate (13.8 per million population per year) in 26 states; in six states the rate exceeded 20 per million per year: Maine (173 deaths; rate: 27.5), Wyoming (50; 22.2), West Virginia (182; 21.0), Pennsylvania (1,210; 20.8), New Jersey (814; 20.2), and Washington (558; 20.1).

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CDC Editorial Note: Despite regulatory actions and the sharp decline in use of asbestos, potential exposure to asbestos continues, but most deaths from mesothelioma in the United States derive from exposures decades ago. Because mesothelioma manifests 20-40 years after first exposure, the number of mesothelioma deaths will likely peak by 2010.[4] The analysis described in this report indicates that the annual number of mesothelioma deaths is still increasing, and future cases will continue to reflect the extensive past use of asbestos. New cases also might result through occupational and environmental exposure to asbestos during remediation and demolition of existing asbestos in buildings if controls are insufficient to protect workers and the surrounding community.

The annual number of mesothelioma cases increased significantly from the late 1970s through the mid-1990s.[4] Projections indicate that the number of mesothelioma cases involving males peaked during 2000-2004 at more than 2,000 cases and should be declining, with an expected return to background levels by 2055. The number of mesothelioma cases involving females (approximately 560 in 2003) is projected to increase slightly over time as a function of population size and shifting age distribution.[4]

Previously, NIOSH examined industry and occupation data for 541 of the 2,482 mesothelioma deaths that occurred in 1999, the most recent year for which such data are available. After 1999, coding information for industry and occupation were no longer available. Of 130 industries reported, significant proportionate mortality ratios (PMRs) were found for ship and boat building and repairing (6.0; 95% confidence interval [CI] = 2.4-12.3); industrial and miscellaneous chemicals (4.8; CI = 2.9-7.5); petroleum refining (3.8; CI 1.2-8.9); electric light and power (3.1; CI = 1.5-5.7); and construction (1.6; CI = 1.2-1.9). Of 163 occupations reported, significant PMRs were found for plumbers, pipefitters, and steamfitters (4.8; CI = 2.8-7.5); mechanical engineers (3.0; CI = 1.1-6.6); electricians (2.4; CI = 1.3-4.2); and elementary school teachers (2.1; CI = 1.1-3.6).[5]

Over the decades, the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency have taken various regulatory actions to control occupational exposure to asbestos.[6] OSHA established a permissible exposure limit (PEL) for asbestos in 1971. This standard set the PEL at 12 fibers per cubic centimeter (f/cc) of air.‖ This initial PEL was reduced to 5 f/cc in 1972, 2 f/cc in 1976, 0.2 f/cc in 1986, and 0.1 f/cc in 1994.[7] Inspection data for 1979-2003 show a general decline in asbestos exposure levels and in the percentage of samples exceeding designated occupational exposure limits in construction, manufacturing, mining, and other industries.[5] However, in 2003, 20% of air samples collected in the construction industry exceeded the OSHA PEL.[5]

The findings in this report are subject to at least three limitations. First, death certificates do not include information on exposure to asbestos or a specific work history. This limits identification of industries and occupations associated with mesothelioma. Second, the state of residence issuing death certificate might not always be the state in which the decedent's exposures occurred, which might affect state death rates. Finally, some mesothelioma cases might be misdiagnosed and assigned less specific ICD codes (e.g., ICD-10 code C76, malignant neoplasm of other and ill-defined sites), and consequently not be captured in this analysis.[8]

Although asbestos has been eliminated in the manufacture of many products, it is still being imported (approximately 1,730 metric tons in 2007) and used in the United States[3] in various construction and transportation products.[6] Ensuring a future decrease in mesothelioma mortality requires meticulous control of exposures to asbestos and other materials that might cause mesothelioma. Recent studies suggest that carbon nanotubes (fiber-shaped nanoparticles), which are increasingly being used in manufacturing,[9] might share the carcinogenic mechanism postulated for asbestos and induce mesothelioma,[10] underscoring the need for documentation of occupational history in future cases. Capturing occupational history information for mesothelioma cases is important to identify industries and occupations placing workers at risk for this lethal disease.

Acknowledgments

This report is based, in part, on contributions from G Syamlal, MBBS, and D Sharp, MD, National Institute for Occupational Safety and Health, CDC.

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*Since 1968, CDC's National Center for Health Statistics (NCHS) has compiled multiple-cause-of-death data annually from death certificates in the United States. CDC's NIOSH extracts information on deaths from occupationally related respiratory diseases and conditions from the NCHS data and stores the information in the National Occupational Respiratory Mortality System, available at http://webappa.cdc.gov/ords/norms.html.

†Codes C45.0 (mesothelioma of pleura), C45.1 (mesothelioma of peritoneum), C45.2 (mesothelioma of pericardium), C45.7 (mesothelioma of other sites), and C45.9 (mesothelioma, unspecified).

‡Entity axis includes information on all of the diseases, injuries, or medical complications, and the location (part, line, and sequence) of the information recorded on each certificate. Detail record layouts available at http://www.cdc.gov/nchs/about/major/dvs/mcd/msb.htm.

§The sum of individual site death totals is greater than the total number of deaths because some decedents have more than one site of mesothelioma listed on their death certificates.

‖As an 8-hour time-weighted average based on the 1968 American Conference of Government Industrial Hygienists threshold limit value.