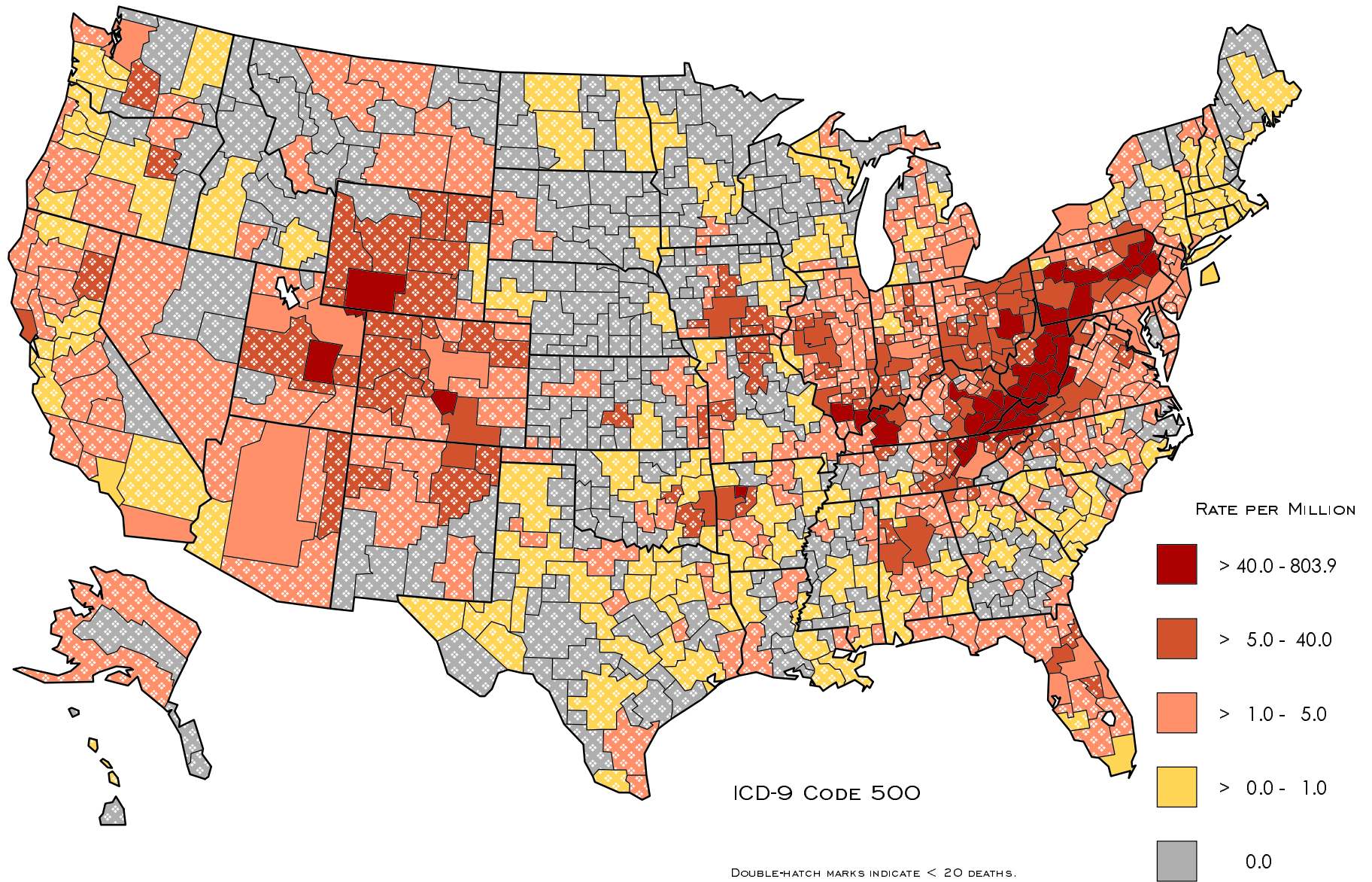
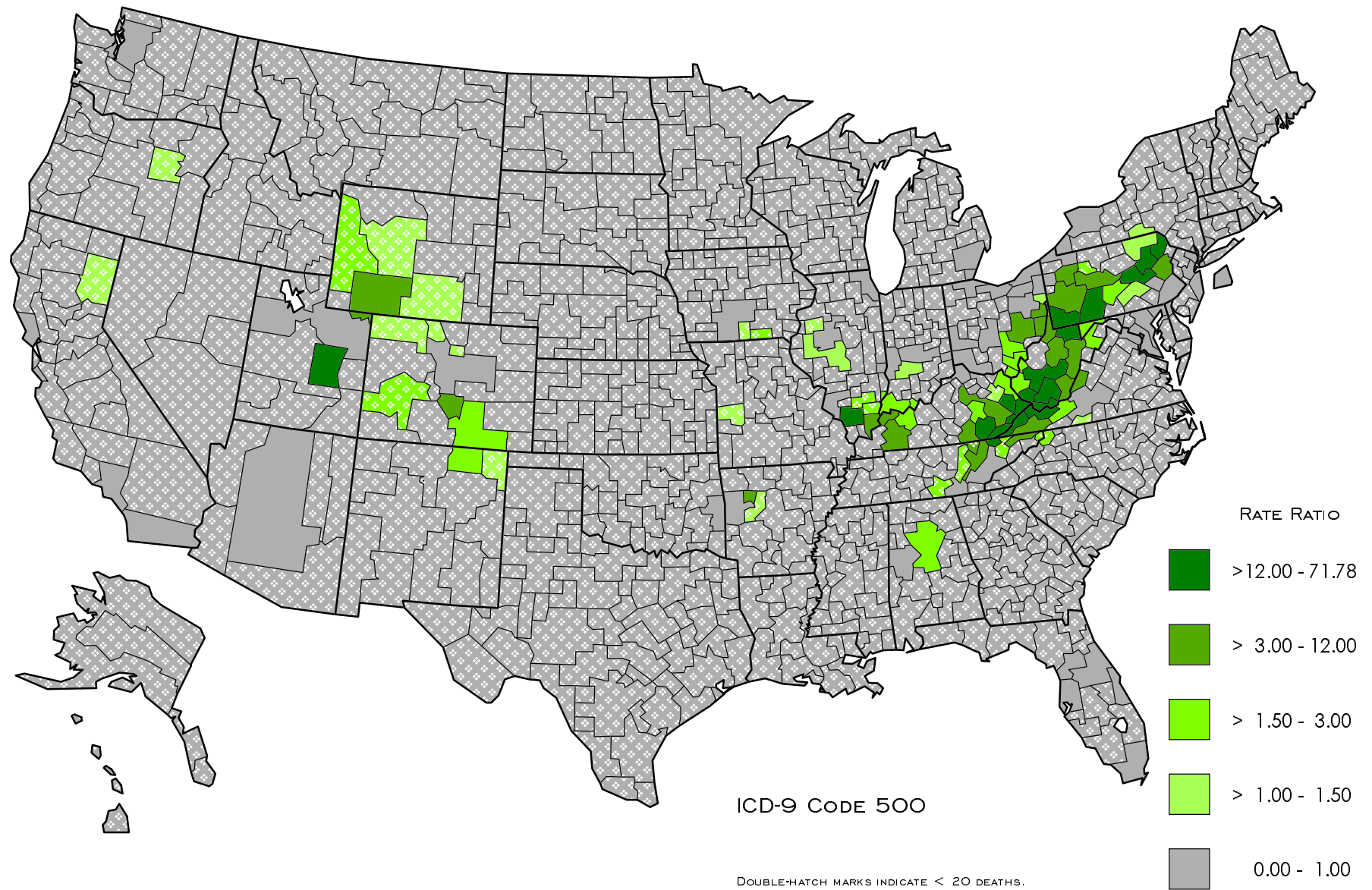


COAL WORKERS' PNEUMOCONIOSIS  
AGE-ADJUSTED DEATH RATES BY HSA  
U.S. RESIDENTS 15 YEARS OF AGE AND OLDER, 1982-1993



COAL WORKERS' PNEUMOCONIOSIS  
DEATH RATES OF EACH HSA COMPARED WITH U.S. RATE  
U.S. RESIDENTS 15 YEARS OF AGE AND OLDER, 1982-1993



## Coal Workers' Pneumoconiosis (ICD-9 Code 500)

Coal workers' pneumoconiosis (CWP) (ICD-9 code 500) is an occupational lung disease resulting from the inhalation of coal or coal mine dust. In some individuals, this lung disease advances to progressive massive fibrosis (PMF), a severe form of the disease associated with excess mortality [Atuhaire et al. 1985]. It is now known that exposure to coal mine dust can result in significant airway obstruction [Attfield et al. 1998], and evidence of airways obstruction appears to increase mortality for individuals exposed to coal mine dust [Ortmeyer et al. 1974]. Other factors that appear to increase mortality include increased exposure to respirable coal mine dust [Miller and Jacobsen 1985]. Coal rank is an important predictor of CWP development: the prevalence and incidence of CWP among coal miners increase significantly with coal rank in the United States and elsewhere [Attfield et al. 1998].

Of all the pneumoconioses, CWP is the most frequently listed on death certificates in the United States. Deaths with CWP account for nearly 60 percent of pneumoconiosis deaths over the last 25 years [NIOSH 1996]. CWP mortality has declined in recent decades, to less than 2000 deaths per year since 1990.

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## **Asbestosis (ICD-9 Code 501)**

Asbestosis (ICD-9 code 501) refers to the pulmonary fibrosis caused by inhaled asbestos [Rom 1992]. This disease typically requires exposure over an extended period of time, with appearance of the fibrosis occurring after a latent period measured in years.

Asbestos is a fibrous mineral occurring in two major commercially-useful types—amphibole and serpentine—which differ in chemical structure, resulting in variant physical and biologic properties. In the United States, 95 percent of commercial asbestos use has involved the serpentine asbestos known as chrysotile [Rom 1992]. Amphibole forms—crocidolite and amosite—account for only a small fraction of the asbestos used. The greatest risk of asbestosis has been associated with insulation work, but other important exposures relate to shipyard exposure, brake lining repair, and work in any facilities where asbestos or asbestos-containing materials are processed [Rom 1992]. The construction industry has been the major consumer of asbestos in the United States; more than 30 million tons of this mineral have been used in construction and manufacturing since the turn of the century [Craighead and Mossman 1982]. Among populations of asbestos-exposed workers, risk of asbestosis varies with intensity and duration of exposure, as well as time since first exposure. However, even among heavily exposed workers, usually no more than 50 percent have been found to have radiographic evidence of asbestosis [Rosenstock 1994].

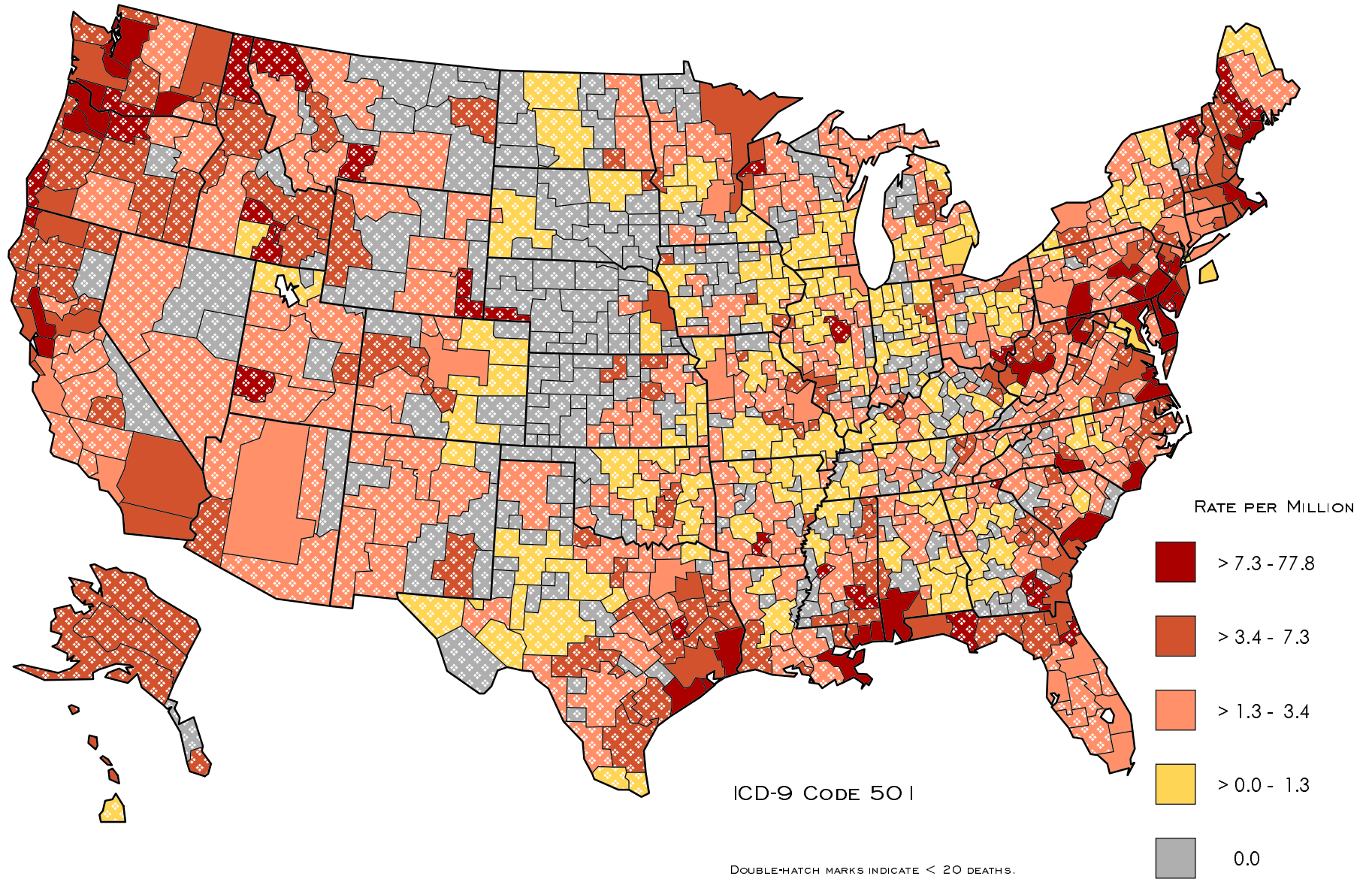
Based on death certificates, the annual number of asbestosis deaths in the United States has increased from fewer than 100 to nearly 1000 during the 1968 to 1992 period (NIOSH 1996).

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