

the working population of the U.S., these workers accounted for only 8% of TB cases among the working population, which does not appear consistent with these workers being at much higher risk of infection than the rest of the population. Moreover, from 1994 to 1998, the TB rate for health care workers declined almost 20%, from 5.6 to 4.6 per 100,000 population, while the rate for other workers remained steady at 5.2 per 100,000. (Ex. 187, p.89)

Because TB rates among healthcare workers vary demographically in a manner similar to rates among the general population, and because it is very difficult to determine whether any individual case was transmitted occupationally, many participants believed that much of the risk to these workers likely arises outside of work. For example, the Infectious Disease Society of America pointed to data "suggest[ing] that community exposure was responsible for most conversions even at a hospital which cares for a large number of TB patients." (Ex. 183-1, p.2) IOM pointed out that foreign-born workers account for a very high percentage of TB cases in healthcare workers. (Ex. 187, p. 89) Many of these workers are from countries such as India and the Philippines, which have very high TB rates.

Increased implementation of TB controls has reduced TB levels.

The record contains virtually unanimous agreement on two crucial points. First, along with the spread of AIDS and an influx of immigrants from areas where TB is common, widespread complacency about TB and a consequent lack of resources focused on TB prevention contributed significantly to the 1985-1992 resurgence of the disease. (62 FR 54173, 54175; NY TR, p. 211) Second, the post-1992 decline in TB has resulted from public health and infection control measures taken as part

of the intense Federally-coordinated response to the resurgence. (62 FR 54175, 54176; DC TR, pp. 767, 884) Primarily because of this CDC-coordinated anti-TB campaign, the public and occupational health communities better understand the factors creating risk of TB transmission and disease, are more knowledgeable about TB containment strategies, and are more aware of the importance of implementing those strategies. (Exs. 187, pp. 13-22, 82; 183-15, p. 1; TR NY p. 212)

Prominent among these TB control strategies are the recommendations in several CDC guidelines for preventing the transmission of TB. CDC updated its TB guidelines for health care settings (first issued in 1982) in 1990 and 1994. (Ex. 4B) The guidelines recommend measures such as early identification and isolation of individuals with infectious TB, prompt initiation of therapy for these individuals, the use of negative pressure ventilation in TB isolation rooms, the use of respiratory protection for health care workers performing high-hazard procedures or working in TB isolation rooms, and employee tuberculin skin testing and training. CDC issued additional guidelines for long term care facilities in 1990, for facilities dealing with homeless persons in 1992, and for correctional facilities in 1996, all locations where the resident populations have relatively high levels of infectious TB. (Exs. 3-35; 6-15; 7-284) As part of its outreach and compliance assistance efforts, OSHA notifies employers of these guidelines, and provides links to them on its own Web site.

Because TB is an airborne hazard, the CDC guidelines have recommended that exposed workers wear respirators. OSHA requires the use of respirators

certified by CDC's National Institute for Occupational Safety and Health (NIOSH). See 29 CFR 1910.134; 29 CFR 1910.139 (1997)(to be revoked). In 1992, NIOSH recommended specific types of respirators for health care workers working around TB patients, and CDC's 1994 guidelines listed specific performance criteria that a respirator needed to meet to provide protection against TB. (Exs. 7-64; 4B) In 1995, NIOSH issued a new certification protocol for respirators, creating new classes of respirators that meet the CDC performance criteria. One new type of respirator is the N95, now the most frequently used respirator for TB protection. (Ex. 7-261)

The record shows that compliance with CDC's TB guidelines has increased significantly since OSHA began work on a TB standard in 1993. Compliance is most extensive in hospitals. Hospitals are where the greatest risk of TB exposure occurs, because most TB cases are diagnosed and treated in a hospital setting, and this diagnosis and treatment often involves the use of cough-inducing procedures such as sputum induction and bronchoscopies that are likely to expose workers to high concentrations of infectious material. During the rulemaking, the American Hospital Association (AHA) relied on the results of 1992 and 1996 surveys that it conducted in conjunction with CDC to show that "hospitals have made significant progress in implementing control measures to prevent transmission of TB consistent with the 1994 CDC guidelines." (Ex. 17-454) As shown in Table 2, by 1996, the vast majority of hospitals were using isolation rooms meeting CDC's criteria, providing appropriate respiratory protection, and performing periodic skin testing of potentially exposed workers.

TABLE 2.—COMPARISON OF TUBERCULOSIS CONTROL MEASURES FOR 103 HOSPITALS THAT REPORTED MORE THAN SIX ADMISSIONS OF PATIENTS WITH TUBERCULOSIS IN 1992 CDC SURVEY AND THAT ALSO RESPONDED TO 1996 CDC SURVEY (EX. 187, P. 111)

	1992 number (%)	1996 number (%)
Engineering Controls:		
• Isolation rooms meeting CDC criteria	59/92 (64)	99/103 (96)
• Routine check of negative air pressure	42/85 (49)	96/99 (97)
• Monthly check of negative air pressure	5/35 (14)	76/90 (84)
Respiratory Protection¹:		
• Nonfitted surgical mask	69/101 (68)	1/103 (1)
• Soft mask, molded or fitted	34/101 (34)	NA
• Particulate respirator	8/101 (8)	40/103 (39)
• N95	NA	85/103 (83)
Tuberculin Skin Testing:		
<i>Testing by Worker Category:</i>		
• Nurses	103/103 (100)	103/103 (100)
• Respiratory therapists	102/103 (99)	103/103 (100)
• House staff	65/81 (69)	65/73 (89)