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Risk for TB in Canadian Healthcare Workers

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Because the risk for, and determinants of, transmission of TB in hospitals caring for moderate numbers of patients with TB remain uncertain, Menzies and coinvestigators from the Montreal Chest Institute Montreal, Quebec, Canada, conducted a study on the association of tuberculin conversion among healthcare workers (HCWs) with ventilation of patient-care areas. A cross-sectional observational survey was performed in 17 acute-care community or university hospitals and included all HCWs who worked at least 2 days per week in the respiratory and physiotherapy departments or in selected nursing units. Participating HCWs underwent tuberculin skin testing and completed self-administered questionnaires. Previous tuberculin tests and bacille Calmette-Guérin vaccinations were verified. Records of patients with TB who were hospitalized in the 3 years preceding the study were reviewed. Air exchanges per hour in patient-care areas were measured by using a tracer gas technique. Multivariate proportional hazards regression was used to estimate the effect of occupational factors on documented tuberculin conversion, after adjustment for nonoccupational factors, among participants with at least one previous negative result on tuberculin skin testing.

Tuberculin conversion was associated with ventilation of general or non-isolation patient rooms of less than two air exchanges per hour; with work in moderate- to high-risk hospitals; and with work in the nursing, respiratory therapy, and physiotherapy departments or housekeeping. Conversion was not associated with inadequate ventilation of respiratory isolation rooms.

It was concluded that tuberculin conversion among HCWs was strongly associated with inadequate ventilation in general patient rooms and with type and duration of work, but not with ventilation of respiratory isolation rooms.

FROM: Menzies D, Fanning A, Yuan L, FitzGerald JM. Hospital ventilation and risk for tuberculous infection in Canadian health care workers. *Ann Intern Med* 2000;133:779-789.