tial for replacing EtO; however, sterilization manufacturers must refine their processes to enhance their microbiocidal efficacy. Equally important, device manufacturers must design their instruments to allow proper cleaning and effective sterilization.

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Smoke Tubes Not Reliable for Negative-Pressure Monitoring

by Gina Pugliese, RN, MS
Medical News Editor

It is recommended that TB isolation rooms be monitored regularly for the direction of airflow to assure that there is negative pressure in relation to the corridor. Researchers at the Montreal Chest Research Institute in Montreal, Quebec, Canada, developed a simple method to measure air-change rates and direction of airflow in patient-care areas. Pure carbon dioxide (CO_2) was released at 13.5 L/min for 5 minutes, then measured for 30 minutes within the room and outside in the hallway with a CO_2-reading instrument. Smoke tubes also were used to measure direction of airflow. If doors and windows were opened, there were significant changes in air-change rates and airflow direction. Smoke-tube measurements were inconsistent, agreed poorly with evidence of CO_2 movement from room to hall, and were affected strongly by room-to-hallway temperature differentials.

The authors concluded that smoke tubes, although inexpensive and simple, are unreliable and that CO_2 release and measurement provides more accurate measurement of air-change rates and airflow direction and the effect of door or window manipulation. The authors note that CO_2 is safe, nontoxic, and inexpensive, and the technique for measuring CO_2 is fairly simple. A direct-reading CO_2 detector is needed and costs approximately $1,500.

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