while being nitrogen-purged. Z Vent was connected to a Michigan Test Lung model PneuView 3, an Ohmeda Volume Monitor 5410 and a Wright spirometer, pressurized within a Fink multiplace hyperbaric chamber. Manned testing went to to 3 ATA and unmanned to 6 ATA while allowing for data collection on three monitoring devices (no data gathered with the spirometer passed 3 ATA).

Results

After rapid pressurizations and depressurizations, visual inspections found no abnormalities. Z Vent was subject to the same testing but with 120V connection while operating. Several alarms were identified, but Z Vent performed as expected. Primary data collection of tidal volumes were gathered at various depths and settings as was secondary data of BPM, PIP, and expiratory volumes.

Summary/Conclusion

The integrity of the Z Vent components were able to withstand pressures up to 6 ATA. With expected various changes to tidal volume throughout pressurizations, the Z Vent performed as anticipated. Safety considerations will be made regarding power.

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Environmental cultures of hyperbaric chambers and treatment areas

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Introduction/Background

Hyperbaric medicine services treat patients with infections, including infections by drug-resistant organisms. We performed environmental cultures at two facilities to assess background contamination of hyperbaric chambers and treatment areas.

Materials and Methods

We used a sponge stick and accepted standardized surveillance methods to collect biological material on surfaces of five monoplace chambers, one multiplace chamber, and various surfaces likely to be touched by multiple patients or health care workers after standard cleaning practices. Samples were placed on selective media for identification of methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant enterococcus (VRE), Clostridum difficile, and drug-resistant gram-negative organisms. A total count of colony-forming units was also performed for each sample.

Results

In the multiplace chamber MRSA was identified on the suction regulator, *C. difficile* on one patient chair and the in-chamber toilet, and resistant gram-negative organisms on the attendant chair, one patient chair, the suction regulator, and the toilet. One monoplace chamber had resistant gram-negative organisms on the control panel and the flow meter and VRE on the flow meter. In the treatment areas, MRSA was found on one scale, VRE on a computer keyboard, and resistant gram-negative organisms on a chart cabinet, a patient locker, a computer keyboard, a scale, a stretcher, a privacy curtain, and at the vital signs stations in both departments. The resistant gram-negative organisms were identified as pseudomonas and acinetobacter species.

Sites with colony-forming units "too numerous to count" included the multiplace control panel, three monoplace chamber gasket seals, three monoplace stretchers, a "clean" patient face mask, a department wheelchair, a scale, and a reception counter. Other highly contaminated sites included monoplace chamber covers, the multiplace attendant and patient chairs and patient supply cart, both printer/copiers, and a chamber operator chair.

Summary/Conclusion

Environmental cultures allowed our caregivers to identify where our cleaning practices may be inadequate to prevent nosocomial infection.