

## **Investigating the use of ‘Cheater’ Fittings for Compressed Nitrogen Gas in the Operating Theatres at the Health Sciences Centre Winnipeg**

Trevor C. Gascoyne<sup>1</sup>, Sarah Kelso<sup>2</sup>

<sup>1</sup>*University of Manitoba*

<sup>2</sup>*Clinical Engineering Program – Winnipeg Regional Health Authority*

The use of medical gases at the Health Sciences Center (HSC) in Winnipeg Manitoba is governed by the Canadian Standards Association (CSA) standard Z7396.1-06 *Medical Gas Pipeline Systems*, which states that all medical gas systems must be gas-specific and non-interchangeable. Following the recent completion of a new operating room (OR) facility at HSC, a ‘cheater’ fitting was installed on the nitrogen gas outlets to convert the newer nitrogen Diameter Index Safety System (DISS) outlets to medical air Schraeder (quick connect) fittings found on most existing surgical tools. These ‘cheaters’ violate the Z7396.1-06 standard because they eliminate the gas-specificity of the outlets and thus introduce the possibility of misconnections, potentially resulting in injuries and/or damages. This assessment found that replacement of the existing medical air Schraeder fittings is not straightforward, due to the double-sheathed hoses that are used with most surgical tools. At present, manufacturers of medical gas fittings do not supply products that will accommodate these double-sheathed hoses. The National Fire Protection Agency (NFPA) in the USA is scheduled to release a revision of its NFPA 99 *Standard for Healthcare Facilities*, which will encourage hospitals to achieve gas specificity in OR’s and encourage gas fittings companies to supply nitrogen-specific components. In the short term, it is recommended that the OR at HSC install warning signs near the existing nitrogen outlets and educate staff about the risks of the current ‘cheaters’. Following the anticipated shift in the industry, the feasibility of eliminating the ‘cheater’ fittings will need to be reconsidered.