



# THE PIPELINE

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## Medical Gas: A Matter of Life and Death

**“It’s bizarre that medical gas is not part of the state’s plumbing code.”**

- Daniel Bent of American Plumbing and Heating

In 2002, two women died during diagnostic procedures at St. Raphael’s Hospital in New Haven, Connecticut because of a medical gas cross connection. According to the *New York Times*, the women received lethal doses of nitrous oxide instead of oxygen.

Earlier this year a baby boy died and a newborn girl suffered brain damage at a Sydney, Australia hospital because they were also given nitrous oxide instead of oxygen. *The Guardian* reported that the tragedy was the result of incorrectly installed medical gas pipes that failed to comply with government standards.

Because of a lapse in the Commonwealth’s laws, there are no regulations that govern the installation of medical gas piping systems in Massachusetts. As the incidents in New Haven and Sydney illustrate, the omission could be a matter of life and death for patients at the state’s hospitals as well as at its nursing homes, dentists’ offices, and other healthcare facilities.

A bill currently before the state legislature would establish regulations and bring medical gas piping systems under the control of the Massachusetts Board of Examiners of Plumbers and Gasfitters. The board would set standards to ensure that licensed, trained plumbers would perform the critical work.

Despite the lack of regulations, plumbers have traditionally handled medical gas installations in the state. The issue became blurry in 2014, however, when the Commonwealth established a process piping license. An unintended consequence of the new license was that it potentially makes it possible for people to install systems who don’t have the proper training or experience with medical gas. By requiring licensed plumbers to do the work, the pending bill would codify the practice and help ensure patient safety.

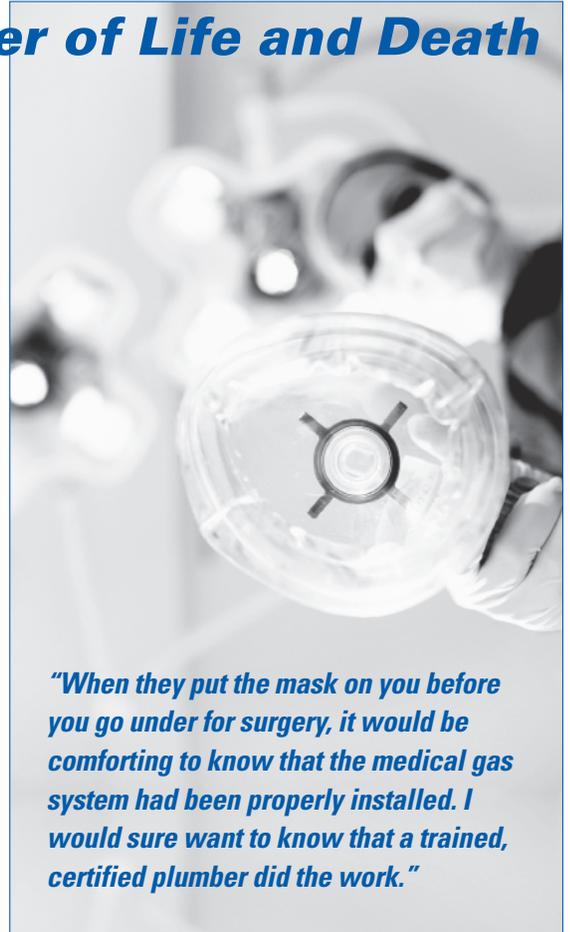
“It’s bizarre that medical gas is not part of the plumbing code,” says Daniel Bent, vice president of American Plumbing and Heating in Norwell.

The company, a member of the Greater Boston Plumbing Contractors Association, recently wrapped construction of Brigham and Women’s Building for the Future in Boston. The 358,670-square-foot, state-of-the-art medical and research facility, which required as many as 30 plumbers on a given day, is indicative of American’s projects. In business for over 30 years, the company is one of the largest plumbing contractors in the region. Bent says that most of American’s work is in the hospital and biotech markets and that about 50% of its business is medical gas.

“It’s a complicated process,” he notes, referring to the installation of medical gas systems. “It’s not like installing water pipe. It’s a specialized, clean, nitrogen-purge process. We’re talking about patients’ lives on the line.”

Local 12 apprentices learn the complicated processes of brazing and medical gas systems at the union’s training center. “It’s important for medical gas to be part of the state’s plumbing code so it can be properly regulated and inspected,” says Rick Carter, the Training Center’s director.

The center has a robust medical gas curriculum that incorporates components from two health and safety standards organizations, the National Fire Protection Agency and the National Inspection, Testing, and Certification Corporation. Apprentices take the 32-hour course in the fifth year of their training program. The center also offers ongoing medical gas installer and brazing recertification classes for journeymen.



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Around half of the work that Local 12 plumbers perform in the field is in hospitals and other medical facilities. It’s not surprising given the Boston area’s many healthcare organizations and its reputation as a hub for world-class medical care. According to Harry Brett, the Local’s business manager, hospitals want to use Local 12 plumbers because of their rigorous medical gas training and their ready knowledge about key issues such as safety protocols, emergency shutoffs, and tie-ins with nursing stations.

“When they put the mask on you before you go under for surgery,” Brett says, “it would be comforting to know that the medical gas system had been properly installed. I would sure want to know that a trained, certified plumber did the work.”

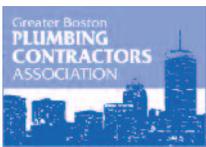


Apprentices Roberto Cardoza (L) and Chance DiPietro practice brazing, one of the skills used to install medical gas systems, at Local 12’s training center.



Local 12’s training center includes a mockup of a hospital’s medical gas system in one of its classrooms.

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