

Hyperbaric chamber safety

Hyperbaric chambers are used in public settings such as Vancouver General Hospital, occupational settings such as commercial dive operations, and user-fee settings such as private medical clinics.

Regardless of the setting, there are potential risks, such as fire or explosion, associated with hyperbaric chambers. Therapeutic treatment with hyperbaric oxygen can also pose health risks to not only the patient, but also the caregiver who may accompany the patient inside the chamber, when necessary. At the Hyperbaric Unit in Vancouver General Hospital, all caregivers undergo fitness examinations because they are potentially exposed to hazards similar to occupational divers.

If you ever refer an injured worker patient to a hyperbaric clinic, please keep in mind the following safety issues.

Safety issues

From WorkSafeBC's perspective, worker safety is a priority. We had a claim from an injured worker who showed symptoms of decompression sickness while working as a caregiver in a private hyperbaric clinic. Like any other employer, private hyperbaric clinics must ensure that their workers understand the health and safety hazards, and are trained and supervised to do their jobs safely.

Before they can be imported and sold in Canada, hyperbaric chambers must be licensed by Health Canada. The medical device regulations require that all medical devices be safe, effective, and of quality manufacture. Health Canada experts review technical information to ensure that medical devices are safe and effective when used for specific indications.

Health Canada currently issues licences for hyperbaric chambers to

treat the following 13 conditions for which hyperbaric oxygen therapy is recognized as an effective treatment by the Undersea and Hyperbaric Medical Society:

- Air or gas embolisms
- Carbon monoxide poisoning
- Clostridial myositis and myonecrosis
- Crush injury, compartment syndrome, and other acute traumatic ischemias
- Decompression sickness
- Problem wounds
- Exceptional blood loss
- Intracranial abscess
- Necrotizing soft tissue infections
- Osteomyelitis
- Delayed radiation injury
- Skin grafts and flaps that are compromised
- Thermal burns

On its web site, Health Canada warns that while some private clinics claim hyperbaric chambers can be used to treat conditions such as multiple sclerosis, cerebral palsy, cancer, AIDS, stroke, and migraine headaches, there is no scientific proof to support these claims.

Safety initiatives

Once a licensed hyperbaric chamber is sold, there is no regulatory body responsible for monitoring the ongoing safety and quality of its operation or the conditions that are being treated. Treatment of medical conditions other than the 13 listed above will be reviewed by Health Canada only if the manufacturer submits an application along with supporting medical documentation.

The College of Physicians and Surgeons of BC has written standards outlining facility and physician requirements to ensure the health and safety of patients and staff. And commercial dive operations have regulations per-

taining to chamber operations and qualified personnel. Nonetheless, the people who operate hyperbaric chambers are not necessarily medical doctors.

Late last year, the BC Ministry of Health established a working group to review health and safety at private hyperbaric clinics. Various professional groups, local government, Health Canada, and WorkSafeBC were represented. The final report summary will be available soon.

Diving medicine

Occupational divers must possess a certificate of medical fitness, and physicians who perform the fitness examinations must maintain current knowledge and competency. WorkSafeBC has, in the past, hosted physician education conferences on diving medicine and is closely collaborating with industry experts to continue to do so.

Contact

For more information on safety issues related to hyperbaric chambers, please contact Dr David Harrison, medical manager, Hyperbaric Unit, Department of Emergency Medicine, Vancouver General Hospital (phone 604 875-4033).

—Don Graham, MD, CCFP
WorkSafeBC Chief Medical Officer

HOLD THAT DATE!

WorkSafeBC's 8th Annual Physicians' Education Conference

Saturday, December 8, 2007
Vancouver Marriott Pinnacle Hotel

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WorkSafeBC articles.