

two types of device in a single oxygen regulator. A wide range of commercially available resuscitators is well illustrated by Lippmann⁵

Conclusions

A wide range of oxygen therapy equipment is now marketed and an Australian Standard is in place.⁶ A clear need exists for independent assessment of equipment performance to identify those systems and designs most suited to diving operations ranging from recreational shore diving to the off-shore oil industry. This would provide a valuable SPUMS diploma thesis.

References

- 1 Schmidt GA and Hall JB. Oxygen therapy and hypoxic drive to breathe: Is there danger in the patient with COPD? *Intensive Critical Care Digest* 1989; 8 (3): no page reference available
- 2 Guyton AC and Hall JE. *Textbook of medical physiology, 9th edition*. Philadelphia: WB Saunders, 1996
- 3 Jain KK. *Textbook of hyperbaric medicine, 2nd revised edition*. Seattle: Hogrefe & Huber, 1996
- 4 Leigh J. Oxygen therapy. In: *Scientific Foundations of Anaesthesia, 4th edition*. Scurr C, Feldman S and Soni N. Eds. Oxford: Heinemann Medical Books, 1992
- 5 Lippmann J. *Oxygen First Aid. Revised Asia-Pacific edition*. Melbourne: JL Publications, 1995
- 6 *Resuscitators intended for use with humans. AS 2488-1995*. Homebush, New South Wales: Standards Australia, 1995
- 7 Acott C. Is 100% oxygen necessary and is it enough in the emergency management of decompression illness? *SPUMS J* 1998; 28 (3) Suppl: 16-20
- 8 Woolner DF and Larkin J. An analysis of the performance of a variable Venturi-type oxygen mask. *Anaesth Intens Care* 1980; 8: 44-51
- 9 Walters D. Oxygen fire in a home made adaptor. *SPUMS J* 1985; 15 (2): 31-32
- 10 Stephenson RN, MacKenzie I, Watt SI and Ross JA. Measurement of oxygen concentration in delivery systems used for hyperbaric therapy. *Undersea Hyperbaric Med* 1996; 23(3): 185-188
- 11 Elliott D. Rebreathers: an introduction. *SPUMS J* 1997; 27(1): 39-43
- 12 Elliott D. Some limitations of semi-closed rebreathers. *SPUMS J* 1997; 27(1): 48-50
- 13 Hamilton RW. Rebreather physiology. *SPUMS J* 1997; 27(1): 57-60
- 14 Berry CB and Myles PS. Preoxygenation in healthy volunteers: a graph of oxygen "washin" using end-tidal oxygraphy. *Br J Anaesth* 1994; 72(1): 116-118
- 15 McGowan P and Skinner A. Preoxygenation - the importance of a good face mask seal. *Br J Anaesth* 1995; 75(6): 777-778
- 16 Komesaroff D. Oxygen administration in diving accidents. *SPUMS J* 1998; 28 (3) Suppl: 20-25
- 17 Wendling J. Normobaric oxygenation in dive accidents: a challenge for the developers of oxygen delivery systems. *SPUMS J* 1997; 27 (2): 101-104

Dr Michael Davis, MD, FANZCA, DipDHM, who was Convener of the 1997 Annual Scientific Meeting, is Medical Director, Hyperbaric Medicine Unit, Christchurch Hospital, Private Bag 4710, Christchurch, New Zealand. Fax +64-3-364-0187. E mail hbu@chhlth.govt.nz .

CRITICAL INCIDENT STRESS DEBRIEFING

Jeff Bertsch

Key Words

Accidents, stress, trauma, treatment.

This talk is about trying to prevent post-traumatic stress disorder, which we call PTSD. The hyperbaric unit where I work is very much involved with the diving community. Our marketeers boast the Florida Keys as the diving capital of the world, which is debatable, after having been diving around the world! But we have a large number of diving professionals (dive pros) at work in the area. Dive shops in the Florida Keys put about 10,000 divers in the water a month. As a result our unit sees about 40 diving accidents a year. We have only been open about three years, but around 50% of our cases are acute cases. By that I mean, that the when the diver ascends, he is either unconscious, paralysed or there are other acute or severe neurological symptoms present.

We have done a very good job at this conference talking about providing care, the best care possible, to our injured divers. I would like to shift the conversation just a little bit and talk a little bit about caring for the health care providers. This is something that has not been discussed much in diving and hyperbaric medicine. However, it has been discussed and looked at length and in a great detail involving emergency medical services (EMS) and public safety personnel. I have become involved with this over the past couple of years.

First of all, I would like to define a "critical incident". It is typically an event where there is loss of life or near loss of life. Tragedies, death, serious injuries, threatening situations are all something that we as health care providers and as diving professionals can see. I look at diving professionals as being the first line of health care providers. In our area the care that a diving professional

provides to a diving accident, or diving injury, quite often can help to make our job easier and enhance the outcome of a diving accident.

Post-traumatic stress disorder symptoms have been recorded following dive accidents. I really started noticing PTSD in the years that I worked as a medic following up on diving accidents. When we followed up these accidents we also followed up the instructors who were involved in these accidents and they had a lot of questions. Hyperbaric units that we talked to also had similar reports from their divers and their dive pros. It definitely warranted some closer attention.

In Monroe County, where my unit is, we developed (really we are in the process of developing) a critical incident stress-debriefing team, called a critical incident stress management (CISM) team to work with EMS. However, with such a large diving population, and a lot of requests to my unit from the diving community, we have also expanded our mission to provide debriefings to the diving community.

Let me quickly go over what is critical incident stress debriefing and what is critical incident stress management. It is a confidential, integrated system of interventions designed to prevent adverse psychological reactions from a critical incident. This does not replace or provide psychotherapy at all. What it does is it helps lessen the impact of a major event for the hyperbaric oxygen (HBO) therapy providers or for the diving professionals. It also accelerates normal recovery of normal people who are experiencing high levels of stress after an abnormal event. Again it does not provide psychotherapy. What we use in our program is something called the Mitchell Model. Jeff Mitchell is a clinical psychologist who did his thesis in the US on PTSD and critical incident stress management.

This service does identify those who may benefit from follow up psychotherapy. So there are several stages in which CISM and critical incident stress debriefing is performed. It generally utilises group support in a safe and confidential environment. Initially there can be what is called the defusing, which is a one on one session with a certified peer counsellor, or mental health professional, who has been trained in critical incident management. That offers stress management education and support, establishes a need for formal debriefing, stabilises crew members and dive pros, so they can return back into their normal life and also return to work quickly.

A formal debriefing in a group, say of divers, or of a hyperbaric staff, generally will occur 24 to 72 hours after the incident. This is a confidential, non-evaluative discussion. The best way to work through these stressful situations is to talk, talk, talk it out. Talk about your emotions, thoughts and feelings of the incident and then follow an educational format on stress and how to cope with

stress as a follow up to the incident.

What I would like to propose, and this is something we are going to do in our area, is the rationale for divers. CISM has been typically used for EMS and public safety staff. There is some excellent literature supporting the effectiveness of CISM for EMS and for public safety. There is very little literature, if any, involving critical incident stress debriefings for the diving community.

We would like to make this service available to our local community and track the results. This is going to be difficult at best, simply because when we give a debriefing, or defusing, there is absolutely no documentation kept during those sessions and confidentiality is a priority. However, we will be able to keep a list of participants' names and follow up on them one month, three months and six months after the incident and hopefully with that information I will be able to report some future findings.

In conclusion, with critical incidents involving divers, which are a regular occurrence, at least in our area, we hope to make a contribution to preventing post-traumatic stress disorder and at least reduce the risk of burn-out which leads to drop-out for involved professionals in the local diving and hyperbaric community.

Jeff Bertsch is a Hyperbaric Program Director at Mariners Hospital in the Florida Keys. His address is PO Box 347, Tavernier, Florida 33070 USA. He works at Mariners Hospital, 50 High Point Road, Tavernier, Florida 33070, USA. Telephone: 305.852.4418 extension 345. Fax: 305.852.8201 E-mail: jeffbertsch@earthlink.net. Web Page: home.earthlink.net/~jeffbertsch/

**INTERNATIONAL
RESUSCITATION CONFERENCE**
"Spark of Life"

to be held
16-17 April 1999
at Hilton on the Park
Melbourne, Victoria, Australia.

For further information contact
Australian Resuscitation Council
C/o Royal Australasian College of Surgeons
Spring Street
Melbourne, Victoria 3000, Australia

Phone +61-(03)-9249-1214
Fax +61-(03)-9249-1216
E-mail carol.carey@hcn.net.au