



BUILDING A DIVING MEDICAL PRACTICE ONE DIVER AT A TIME

By David Charash, DO

I treated my first case of decompression illness in a hyperbaric chamber in the early 1990s after receiving my medical training in emergency medicine/hyperbaric medicine.

The diver suffered a devastating injury as a result of rapid ascent. The immediacy of the need for acute treatment, and the apparent miraculous improvement of this patient, got me hooked on making hyperbaric and diving medicine a career.

As Medical Director of a Wound Care and Hyperbaric Medicine program, I apply my understanding of the gas laws learned years ago with every patient I treat in the hyperbaric environment. As my interest in diving medicine has persisted throughout my career, I have developed a diving medicine practice that offers exclusive medical care to divers.

So, what is diving medicine? How does one develop a diving medicine practice? What is a diving medicine physician?

Diving medicine encompasses four key elements. The first element is the diagnosis, treatment, and prevention of conditions caused by humans entering the undersea environment.

Understanding the effects of pressure on gases is the second key element necessary to offer the best medical care and recommendations to any diver. The third key element is the understanding of the relationship between diving safety and fitness. The fourth key element emphasizes the relationship between the many hazards in the environment that can affect the diver. A diving medicine physician needs to have a working understanding of hyperbaric medicine. Understanding

the role of recompression after a diving illness such as decompression sickness and/or arterial gas embolism and how this treatment plays in the recovery and return to diving is paramount.

As a diving medicine physician, establishing a medical practice exclusive to divers is no easy task. Hanging up a shingle with your title and a picture of a hardhat diver outside your office likely won't bring you divers as patients. I have developed a marketing strategy and a business plan that is designed to allow me to offer the highest level of comprehensive care to any and all divers. This is, of course, a work in progress. A genuine interest in diving medicine and a strong motivation is important to becoming successful. Of course, having the knowledge and credentials to be able to offer and deliver this comprehensive care is essential.

So, how does one acquire the knowledge and credentials in establishing yourself as a diving medicine physician? What credentials would be helpful in attaining this recognition? Is there only one pathway? Well, in fact, there are many options to consider. After medical school and subsequent residency, one can complete a Fellowship in Undersea and Hyperbaric Medicine through the American Council for Graduate Medical Education (ACGME), or the American Osteopathic Association (AOA). This additional year of postgraduate training is a great foundation for building a career in diving medicine.

The Undersea and Hyperbaric Medical Society, through the ACGME, offers board certification in undersea and hyperbaric medicine. To sit for the boards one now has to complete a fellowship in UHM. There was a practice track,



at one point, that allowed those with documented clinical experience to become board certified. This option, is now, however, closed. Board certification in Undersea and Hyperbaric Medicine is a rigorous examination that tests the knowledge in the discipline of UHM. One has to recertify every ten years. There is an ongoing continuing education program that one must follow to be allowed to recertify.

Members of the United States Armed Forces can complete rigorous training as a dive medical officer/undersea medical officer in their respective branches. For example, The United States Navy has a three-phase training program that develops the candidate to work and direct all diving operations above or below water. The focus is, of course, care of the military diver.



There are numerous educational programs that offer significant information relevant to the practice of undersea and hyperbaric medicine. Two such programs include the Undersea and Hyperbaric Medical Society/National Oceanic and Atmospheric Administration (UHMS/NOAA) Physician Training Course in Diving Medicine for diving medicine physicians (DMP), as well as the UHMS Medical Evaluation of Diver (MED) course. These courses meet the training objectives of the Diving Medical Advisory Committee, The European Diving Technology Committee, and the European Committee for Hyperbaric Medicine. The curriculum of the DMP course focuses on the recognition and treatment of diving medical emergencies. There is also practical hands-on experience operating various recompression chambers as well as use of commercial and military equipment. Successful completion of this program DMP program allows the medical provider to be recognized as a level II A Examiner. The MED course places emphasis on the examination of commercial, sport, research, and other related public safety divers, and determines fitness to dive. Successful completion of the MED course offers the designation of a Level 1A examiner.

The Undersea and Hyperbaric Medical Society has listed all of the physicians that have completed the UHMS/NOAA dive medicine physician course, as well as the UHMS Medical Evaluation of the Diver. In addition, on the UHMS web site, there are numerous continuing medical education programs related to diving medicine.

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Divers Alert Network (DAN) can designate a physician as a DAN referral physician. The following are required to qualify: Training as an MD or DO, licensed to practice medicine, completion of hyperbaric and dive medicine-related course within the past five years. Military-trained diving medical officers with completion of an accredited hyperbaric fellowship or board certification in undersea and hyperbaric medicine may provide exemption. A DAN member who calls the DAN medical information line and needs a medical evaluation could be referred to a DAN referral physician in their local area.



Whether one has to be a diver to practice diving medicine is a relevant question. I know a few diving medicine physicians who have never donned a mask and fins. They are well trained, highly educated, and offer great advice and treatment. For myself, having diving experience has facilitated a working understanding of the very nature of the hazards, equipment, environment, and work requirements, and has allowed me to offer an opinion that is appreciated and respected by my diver patients. The corollary is, if I am a physician who dives, but has no additional training or education in diving medicine, should I identify myself as a diving medicine physician? I will allow the reader to answer this question.

In the United States, there are no minimal requirements for certification and/or qualification for a physician to perform a medical examination of a recreational diver. Certain government organizations such as the United States Military and the National Oceanic and Atmospheric Administration have specific requirements. Regarding scientific divers, the American Academy of Underwater Sciences in their most recent guidelines require that all medical evaluations shall be performed by, or under the direction of, a licensed physician of the applicant-diver's choice, preferably one trained in diving/undersea medicine. Clearance to return to diving must be obtained from a physician following any major injury or illness, or any condition requiring hospital care or chronic medication. If the injury or illness is pressure related, then the clearance to return to diving must come from a physician trained in diving medicine.

Regarding commercial divers in the United States, guidelines from the Association of Diving Contractors International (ADCI-followed by much of the commercial diving industry) do not mandate qualifica-



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tions of diving physicians. Regarding public safety divers, there are no specific requirements, as similarly, there is no accepted or adopted minimum training requirement.



In contrast, the United Kingdom has qualifications for training and certification of physicians to be certified as an approved diver medical examiner for the working diver, mandated through the Health Safety Executive (HSE). Other countries in Europe and Australia have similar mandates for training and qualification.

So what about the typical primary care physician who has no training or additional coursework in diving medicine, that, lets say, is asked to see a recreational diver requiring a medical evaluation to complete the Recreational Scuba Training Council (RSTC) medical statement? There are numerous resources for help, including page three of the RSTC form, which offers a guideline for the physician. Included in this document are sixteen refer-



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ences. In addition, Divers Alert Network staffs medically-trained diving professionals to offer direction and referral to local physicians.

In establishing a dedicated diving medicine practice, I have a clinic that sees recreational, public safety, scientific, and commercial divers. I offer comprehensive care of the diver, including the Recreational Diving Examination, and clearance to dive. I also offer medical consultations of divers with medical illness. An important part of my services includes evaluation of the ill or injured diver, as well as return to diving after diving injury or medical/surgical illness.

On a given day in my diving medicine clinic, I must understand the work demand of a particular diver, and relate the effects of the gas laws (diving physiology) on that individual. A thoughtful evaluation and understanding of the divers' medical or surgical conditions are also absolutely necessary to offer the best advice.

Another important part of any successful diving medicine practice is the education and promotion of dive safety to the diver and the diving community. For the past three years, I have developed a Diving Medicine Conference at Danbury Hospital, Danbury, Connecticut. This annual community lecture program has brought together divers and doctors in the same room. CME is offered to medical providers.

We have had national speakers speaking on various topics of diving medicine, safety, and risk reduction. The diving industry each year has helped support the program and there is a robust industry presence. This well-attended program is a great venue in promoting and elevating everyone's knowledge of diving medicine and dive safety.

In looking at the community of divers, there are recreational, public safety, scientific, commercial, and military divers. It is imperative that a diving medicine physician serves the community of divers. So, understanding the demographics, and making yourself available is a fundamental key to becoming successful.

A great example of service to the community for example is the recreational diving community. Spending time at the local dive shops, joining and becoming active in the local dive clubs, gives a perspective on the diving community. One can be involved by promoting dive safety and medical fitness by offering lectures, and panel discussions. Many of the local dive clubs offer some great educational venues. Your credibility is directly related to your sincerity.

In subsequent articles, I will present real cases of divers who have presented to the diving medicine practice with both dive related injury and/ or medical surgical illness. We will explore the process in determining whether the diver can return to diving.

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uation of Diver programs. Dr Charash is a DAN Referral Physician, DAN Instructor, and Certified PADI Diver. Dr Charash lectures locally and nationally on topics of Dive Safety and Dive Medicine. Dr Charash has the only medical practice in Connecticut that offers comprehensive care to the diving community.