

# SPUMS ASM 2003 Workshop

## Designing a recreational diving medical for the 21st Century

Michael H Bennett

### Key words

Medicals – diving, fitness to dive

### Abstract

(Bennett MH. Designing a recreational diving medical for the 21st Century. *SPUMS J.* 2004; 34: 150-2.)

The main theme of the 2003 SPUMS Annual Scientific Meeting was *Risk, diving and the pre-dive medical*. The Workshop built on this theme in looking at how diving medical assessments for the recreational diver might be improved or developed for the foreseeable future. Whatever the current approach, there is no quantitative evidence published to support or refute the routine usefulness of dive medicals when employed in any capacity. Many members of the Society have expressed the desire to re-visit the diving medical. This paper presents a summary of the Workshop discussions and the main conclusions and recommendations reached by the participants. The Workshop resolved to convene a committee of interested members to consider these and to make a report to the Executive Committee on these matters.

### Introduction

The South Pacific Underwater Medicine Society (SPUMS) recommends all recreational dive candidates receive a 'fitness to dive' medical examination from an appropriately trained medical practitioner. The Society publishes a recreational diving medical guide and certificate for the use of practitioners,<sup>1</sup> and this examination has formed the basis of Australian Standard 4005.1.<sup>2</sup> This in turn formed the basis for legislation in Queensland, where entry-level dive medicals are a legal requirement.

Originally designed as a 'pass or fail' examination modelled on the commercial dive medical approach, the SPUMS medical has been modified on a number of occasions. Most significantly, in 1996, the certificate issued to the diver was amended to replace the statement 'fit for scuba diving' with the more flexible 'I can find no medical condition incompatible with (diving)', and to allow for qualifying statements at the discretion of the medical practitioner.

To be useful, any dive medical screening process would need to prevent poor health outcomes associated with diving while not unnecessarily restricting the activity. What is meant by the second half of that last statement is very difficult to define. At one extreme, if there were no diving ('if man was meant to breathe underwater we would have gills') there would be no poor outcomes. At the other, unrestricted diving would lead to a number of deaths that might easily be predicted and prevented, e.g., an active epileptic diver.

Whatever the approach, there is no quantitative evidence published to support or refute the routine usefulness of dive medicals when employed in any capacity. In a recent review of 300 occupational dive medicals, Greig et al have

suggested that the AS/NZ 2299 medical questionnaire used for occupational diving has little utility in picking up significant information predictive of disqualification.<sup>3</sup> This approach is likely to prove very useful to refine our approach, but begs the question of whether our criteria for disqualification are useful in truly preventing death or injury. While a range of standard approaches have been put in place in different settings, no attempt has been made to prospectively analyse the effect of any change in recreational dive medical policy. Research in this area would be very useful.

Many Society members have expressed the wish to re-visit the diving medical and, for this reason, the Workshop at the 2003 Annual Scientific Meeting addressed this issue.

### Objectives

- 1 To discuss the SPUMS current approach to recreational 'fitness to dive' medicals
- 2 To consider whether this approach continues to reflect best practice
- 3 To recommend changes for consideration
- 4 To consider how our approach may be integrated with an international approach
- 5 To recommend the course of action most appropriate to proper consideration of the recommended changes

### Problems with the current diving medical

The meeting was asked if there were any perceived problems with the medical as currently formulated. Several points were raised for the consideration of the workshop:

- 1 The process is time-consuming and expensive for the candidate
- 2 It has proved difficult to deliver trained physicians to

the candidates when and where they are required. This is particularly so in those States where there is no legal requirement

- 3 The medical is geared to a fit/unfit decision, particularly in Queensland, to the detriment of a meaningful risk assessment process
- 4 The system is structured so that the medical practitioner is working for the candidate and there is a consequent bias toward a positive outcome
- 5 There is little element of risk assessment

The system requires the medical practitioner to assume a 'medicolegal risk' beyond the strictly medical scope. There is an element of competency assessment beyond the ability of the medical consultation to address. The system allows dive training organisations to shift risk from the instructor to the physician in an inappropriate way.

Following this identification of problems in the present system, the Chair posed a series of questions. Those questions and a summary of the responses follow.

#### **Is there a continuing role for the physician in relation to a candidate for dive training?**

There was widespread support for the involvement of a physician at some level during the process of assessing candidates for dive training.

**Conclusion:** Agreed the physician continues to have a part to play.

#### **If there is a role for the physician, does that physician require training and expertise in diving medicine?**

There was no dissent expressed to the proposition that any assessment of risk or fitness for scuba should be made by a trained physician.

**Conclusion:** Agreed that physicians involved in these assessments need specific training.

#### **Do all candidates require assessment by a physician in person?**

This proposition generated considerable discussion. Many physicians present considered the face-to-face consultation with all candidates was not a justified use of the resources of either the candidate or the trained physician.

There was no resolution for this question at the workshop. The main options expressed were:

- 1 Routine, thorough consultation with all candidates, much as at present
- 2 Selection of those requiring consultation using a screening tool such as the Recreational Scuba Training Council questionnaire used internationally, properly administered and assessed by the dive training agency
- 3 Consultation by candidate preference after a discussion

of the special risks associated with scuba diving

**Conclusion:** More discussion is required to attain consensus on this question.

#### **If not all candidates are required to consult a physician, how is a rational decision made as to who should do so?**

As this question was highly related to the previous question, there was no consensus here either. Several options were discussed, and they may be pooled into the following general headings:

- 1 Administration of a questionnaire (as in 2. above)
- 2 Self referral where the candidate, in the course of their initial training, makes a decision to seek a medical opinion and risk assessment
- 3 Decision by dive trainer. In this option, the dive trainer would identify individuals who should be requested to seek medical consultation

**Conclusion:** More discussion required.

#### **Whatever the method chosen, what is the most rational classification of 'medical fitness'?**

There was general consensus that dive candidates could be divided relatively neatly into three groups for the purpose of medical suitability to undertake scuba training:

- 1 Those with absolute contraindications. These candidates are not recommended for dive training. This is likely to be a small group numerically, but of high importance from a medical point of view
- 2 Those with relative contraindications. For these candidates, risk assessment and explanation is of prime importance. It is likely this group will constitute a reasonable proportion of the population
- 3 Those able to undertake training with no specific medical advice. In this group, the emphasis would be on appropriate situational training and instruction by the dive training agency. This group is likely to be a large proportion of the dive-training population

**Conclusion:** General agreement these three groups could be identified.

#### **For whom is the doctor working?**

There are three groups who might see themselves as employing the medical practitioner in some sense. Any combination of these three may operate in the real world:

- The candidate
- The dive training organisation
- The society within which candidate, physician and dive trainers live

Within a number of occupational groups, the aviation industry being a good example, there is a clear responsibility on the physician to consider the 'greater good' when examining for medical fitness. Pilots are clearly responsible

for passengers, their aircraft and other aircraft in their vicinity. Any medical condition associated with impaired ability in the cockpit should be notified not only for the good of the individual pilot, but for society as a whole. The same might be said for private driving licences, and most general practitioners must have been asked questions concerning 'fitness to drive'.

The Workshop was asked to consider the relative roles of all involved when a school or dive training organisation invited the medical practitioner into the premises, state school or commercial, and asked that they perform dive medicals on a group of candidates. In these situations there might be considerable, if subtle, bias placed on medical decision making.

The Workshop identified the potential problem in primarily considering the candidate as the individual purchasing a service, with the expectation of being 'satisfied'. There was support for the position that this is a widespread potential dilemma, but that a professional approach implicitly recognises this and 'ensures' an appropriate outcome. Experience in the aviation industry suggests otherwise; that this bias to satisfy our patients with the outcome they desire is a powerful influence.<sup>4</sup>

**Conclusion:** The responsibility of the practitioner in this regard requires consideration.

#### What should be the outcome of the medical consultation?

The Workshop expressed the view that there were members of the Society who felt a pass/fail result was appropriate and necessary in protecting themselves from unnecessary medicolegal risk. Others were strongly of the opinion that the decision whether to undertake diving or not was a personal one, but one that should be informed by appropriate risk/benefit analysis and advice. The decision by the dive training organisation whether or not to train an individual is theirs to make, and not the responsibility of the physician.

**Conclusion:** More work is required to define the most appropriate outcome of the consultation.

#### Should the 'fitness to dive' medical be subject to audit?

Clinical audit of the medicals performed and the appropriateness of recommendations is likely to reinforce appropriate practice. Ideally, a system would be put in place to sample the population of dive medicals and subject this sample to clinical review, including feedback to the individual practitioner. This practice, often seen as threatening by doctors, might actually have benefits in terms of medicolegal risk, and would be, at the very least, an open commitment to provision of a high-quality service.

The Workshop felt, however, that such a system is most unlikely to be developed in the absence of specific funding for this purpose. Such a move would be unprecedented for

a recreational activity. It might be useful to further consider what kind of quality process could be applied in this area.

**Conclusion:** More consideration is required in relation to this question.

#### Where to from here?

The Workshop identified several areas in which further consideration is justified. At a fundamental level, questions have been raised as to the medical and cost effectiveness of the 'fitness to dive' medical.

The Workshop resolved to convene a committee of interested members to consider the findings and recommendations of this workshop and to make a report to the Executive Committee on these matters. This report would be presented for discussion at a subsequent ASM of this Society.

The author of this report was appointed as interim chair of this committee for the purpose of recruiting members. I therefore ask any members of the Society who wish to contribute thoughts on the issues discussed above to contact me at <m.bennett@unsw.edu.au>. All volunteers willing to actively contribute to this committee will be welcome. A list of those participating in the committee will appear in the December 2004 issue of the Journal. This is an important task for the Society.

#### References

- 1 *The SPUMS Diving Medical*. The South Pacific Underwater Medicine Society, 2004. <www.spums.org.au/index>
- 2 AS 4005.1: Training and certification of recreational divers – minimum entry-level SCUBA diving – Medical form for prospective recreational SCUBA divers. *Australian Standards*, Melbourne. Supplement May 2000.
- 3 Greig P, Gorman D, Drewry A, Gamble G. The predictive power of initial fitness-to-dive certification procedures for occupational divers in New Zealand *SPUMS J.* 2003; 33: 182-6.
- 4 Gorman D. From police to health adviser: the evolution of modern occupational health surveillance. *SPUMS J.* 2003; 33: 134-9.

*Michael H Bennett FANZCA, DipDHM, is Medical Director, Diving and Hyperbaric Medicine, Prince of Wales Hospital and Senior Lecturer at the University of New South Wales. He was the Scientific Convenor for the 2003 ASM.*

*Department of Diving and Hyperbaric Medicine, Prince of Wales Hospital,*

*Randwick, NSW 2031, Australia.*

**Phone:** +61-(0)2-9382-3880

**Fax:** +61-(0)2-9382-3882

**E-mail:** <m.bennett@unsw.edu.au>