Overmedicalising – again!

To the Editor: We write in response to the Editor's comment in CME[1] expressing frustration with delays during the online registration process for the Two Oceans Half-Marathon. Dr Farham attributed this to completion of a medical questionnaire as part of the process. Issues raised included the length of the questionnaire, its content, accuracy of completion, clinical value of the information obtained, and the merits and validity of using the data for further research. We respond as the clinicians responsible for developing and introducing this medical screening process.

Firstly, it is important to distinguish between the technical online entry process and the completion of the pre-race medical information questionnaire. While the technical aspects of handling large volumes of runners attempting to enter online at the same time should be optimised, this must be separated from the merits of runners completing pre-race medical information. We respond only to the medical information.

As sport and exercise medicine physicians, we strongly promote regular physical activity as an important lifestyle habit and intervention for all – young and old, healthy and diseased. However, injuries and medical complications can occur during strenuous physical exercise, and these 'potential side effects' can range from relatively minor complaints to life-threatening events and, rarely, sudden death. This was recently highlighted in South Africa by loss of life during a mass 'fitness' testing as part of screening for job applications, a mountain bike event and the loss of 2 lives during a Half-Ironman.

The incidence of sudden death during any mass-participation community-based sports event can be calculated. Therefore, in the case of the Two Oceans, incidence of cardiac arrest and sudden death during the half-marathon and the ultra-marathon can be compared with that for similar races,[2,3] allowing us to evaluate the relative risks of sudden death or serious medical complications in sports events, with the main purpose of identifying and implementing interventions to reduce the risk and make participation in such activities safer.

The Two Oceans Marathon organisers approached us because they were concerned about the number of deaths in the preceding 3 years (2008 - 2010). Accurate retrospective medical data for this period showed that the incidence of sudden death during the Two Oceans was significantly higher than that reported for similar long-distance running events in the USA (Table 1).[4] The incidence of sudden death among all Two Oceans runners (ultra - and half-marathon combined) was 7 - 8 times higher than that reported in the USA, with an even higher incidence (>20 times) in the half-marathon runners. As the latter do not require any qualifying time, entrants could be previously sedentary non-runners.

Based on these data, the race organisers supported our suggestion to form a dedicated medical team to investigate this high incidence, and to find solutions to reduce the risk of sudden death and medical complications during the race, in particular during the half-marathon. This team was in place for the 2011 and 2012 races; one of its first tasks was to optimise medical care and management of medical complications (including cardiac arrest) on raceday.

However, the medical team's main challenge was to reduce the risk of medical complications (including serious life-threatening medical complications and sudden death) from occurring. In 2010, there were no clear international guidelines on measures to reduce the risk of medical complications during endurance sports events. Subsequently, several international medical organisations[5] and sports bodies[6,7] have published position statements regarding the pre-participation medical evaluation of mainly competitive elite athletes. These include strong recommendations on the medical screening of elite athletes to reduce the risk of medical complications at events. Furthermore, guidelines have been published for medical screening before participation in exercise for previously sedentary individuals[7,8] and regular recreational exercisers.[9]

After carefully evaluating these guidelines, the Two Oceans medical team embarked on obtaining medical information from race entrants by a questionnaire with the purpose of: (*i*) determining how many runners reported risk factors for medical complications during the race or symptoms of an acute illness in the 7 days before the event (a separate email just before the event at the time of registration); (*ii*) providing runners who report such risk factors with medical information and guidelines regarding safe exercise and participation in the race; and (*iii*) ensuring that the medical team had relevant medical information of each runner on a central database should emergency treatment be required on raceday. Hence, the process was not designed to exclude anyone from running for medical reasons but to provide educational material to runners and to improve emergency medical care.

A successful pilot was conducted in 2011; as a result of these data, the medical screening system was implemented for the 2012 race. Based on the medical information obtained, runners with a high risk of developing medical complications were contacted and given information regarding medical clearance and guidelines for safe participation during exercise. Analysis of the data obtained on race day in 2012 showed that this screening, risk stratification and limited educational intervention significantly reduced the incidence of medical complications (particularly, life-threatening medical complications) during the 2012 race.

Consequently, the medical team retained and improved the medical questionnaire for the 2013 race. Runners who entered for this race will again be risk stratified and educational interventions implemented to inform them about guidelines to reduce the risk of sudden death or medical complications – not only on race day but also during training before and after the event.

We believe that this is good ethical and scientifically based clinical practice and not 'overmedicalising' a serious medical problem. It is good clinical practice to identify an 'at risk' population and then reduce the risk of any potential 'negative side-effects' (injuries and medical complications during exercise) when prescribing the correct 'medication' (exercise) to individuals.

Table 1. The incidence of sudden death (per 100 000 race participants) during the Two Oceans[4] compared with data from long-distance races in the USA[2,3]

	USA data over 10 years	Two Oceans data (2008 - 2010)[3]
All (ultra-marathon* and half-marathon)	0.54 - 0.58[1,2]	4
Ultra-marathon*	1.01[1]	0
Half-marathon	0.27[1]	6.7

* USA data are for the standard marathon distance.

To hasten the online entry process, Dr Farham suggested that 'most sensible people just enter "no" for everything'. Our data indicate that this advice should not be taken, and respectfully invite Dr Farham to correct her submission. Rather than to discourage runners to complete the medical information correctly, we believe that they should be encouraged to do this as accurately as possible – it may save their life on raceday.

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Martin Schwellnus
Wayne Derman
UCT/MRC Research Unit for Exercise Science and Sports Medicine, Department of Human Biology, Faculty of Health Sciences, University of Cape Town
mschwell@iafrica.com

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Dr Farham responds: While in no way decrying the medical and scientific expertise of Professors Schwellnus and Derman, I still have problems with the format of the current medical questionnaire that has to be completed before entering the Two Oceans Half-Marathon.

First, the length of the questionnaire: While I understand that the technical difficulties were not of Schwellnus' and Derman's making, the length of the questionnaire in itself was liable to result in 'answering fatigue'. Any long questionnaire, particularly if the person filling it out cannot see any immediate and direct benefit, is likely to be answered poorly towards the end. The mere fact that one could not enter the race without first completing this marathon task shows that the organisers at least realised that many people would simply abort if they did not have to finish it. Surely the experience gained from the questionnaires administered in 2011 and 2012 as part of the entry process might allow researchers to formulate a succinct set of questions designed to highlight the specific types of medical problems that would be liable to cause problems over a 21 km race? Perhaps individuals identified in this way as at risk could then be contacted and asked to complete a full questionnaire. As for access to medical information on raceday, we all have the opportunity to fill out a simple form on the back of our race numbers with any medical condition and medication taken – quick and easy to access by emergency personnel – anywhere on the course.

Second: How can Schwellnus and Derman say with certainty that it was the questionnaire administered in 2011 that 'significantly reduced the incidence of medical complications (in particular, serious life-threatening medical complications) during the 2012 race'? This is one year's data – I would hesitate to make such conclusions. In fact, the comparison of 10 years of data from all ultra-, marathon and half-marathon distances in the USA with 3 years of data from the Two Oceans is statistically questionable in itself.

I did not 'suggest' that people simply answered 'no' to all questions. This is however what was happening. I was simply reporting what I found on the race Facebook page and in conversation and correspondence with many fellow runners who were as frustrated as I was by the process. People were so irritated that it is highly unlikely that the data collected from the lengthy questionnaire would be complete and accurate.

I first ran one of the Two Oceans pre-race fun runs 9 years ago – an 8 km course. A man younger than me died on that fun run. The two participants who died in the recent Half-Ironman apparently had no previous history of cardiac illness. While I can see that the race organisers may wish to limit their liability for avoidable accidents and possible illness (and even death) in such events, we do not – cannot – live without risks. I stand by my assertion that this is 'overmedicalisation'.
(P.S.: I did get my D seeding!)

Bridget Farham
Editor, Continuing Medical Education
ugqirha@iafrica.com

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