

WORLD LIFE SAVING MEDICAL ADVISORY PANEL MEETING
NEWPORT BEACH, CALIFORNIA - 13TH-18TH MAY 1978
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The World Life Saving Movement was formed in 1971 with the Surf Life Saving Associations of Great Britain, United States, Canada, South Africa, New Zealand and Australia as its principal members. A Medical Advisory Panel was formed prior to the 1972 Congress and this Panel, with representation from all member countries, has met regularly ever since. At the most recent meeting in California, delegates from ten different countries discussed a wide ranging series of topics and listened to presentations of papers from members of the panel in addition to papers from the two special guests, Professor Jerome Modell, Professor of Anaesthesiology at the University of Florida and Dr James Wilson, Professor of Pathology at Oral Roberts University.

The following is a precis of the items discussed at the Meeting:

1. Manual methods of respiratory resuscitation (eg. Sylvester-Brosch and Holger Nielson) were discussed and condemned as having no place in teaching programmes for basic life support. Dr Mark Harries from the United Kingdom presented a paper in which he summarised the scientific evidence for this recommendation. Many papers have been written over the last thirty years on the comparison between manual methods and expired air resuscitation but only the more recent papers have included studies of blood gases. Dr Harries' presentation made it very clear that although in some cases there appears to be some degree of aeration of the lungs, arterial oxygen content drops disastrously in almost all cases when the manual methods are used. By contrast, expired air resuscitation results in highly satisfactory levels of arterial oxygen. There are many lifesaving bodies around the world still teaching and recommending manual methods in 1978.
2. Immersion Hypothermia. The medical literature has been suggesting over the last two years that cardiopulmonary resuscitation should not be performed on the pulseless, apnoeic patient who is profoundly hypothermic; the Medical Panel could find no evidence at all to support this suggestion which emanated from the Royal Navy. All case reports of survival after prolonged immersion in very cold water have included cardiopulmonary resuscitation as part of the initial management. Experts other than those in the Royal Navy believe that CPR should be performed irrespective of the patient's temperature.

The Medical Panel advised Lifesaving Associations that when first rescued, patients who are conscious or shivering should be warmed actively but in patients who are unconscious the correct management was simply to prevent further heat loss by proper use of a space blanket or whatever type of covering is available. Active rewarming by lifesavers of this type of patient is not advised because of the hazards of the further drop in temperature which occurs immediately after active rewarming has been commenced. It was felt best to leave active rewarming to the hospital scene.

3. Computer searches of the medical literature have been carried out by the Surf Life Saving Associations of Great Britain and Australia on the subject of drowning, resuscitation, hypothermia etc. These Medlars Searches are made available to all members of the Medical Panel and have been extremely helpful in uncovering articles which would not ordinarily be seen by the doctors concerned.

4. The use of mechanical ventilators was discussed at length and members of the Panel were well aware of the complications which have been reported in the literature from the use of certain types of ventilator. While approving the use of mechanical ventilators for lifesavers with special training, the Panel affirmed that in teaching basic life support the emphasis must be on immediate institution of expired air resuscitation. The available machines were reviewed and the Panel felt that mechanical ventilators for use by lifesavers outside hospital should be:
 - a) Volume cycled
 - b) Manually triggered
 - c) Capable of delivering 100% oxygen
 - d) Capable of instantaneous flow rate of at least 100 litres per minute.

The Surf Life Saving Associations which use these ventilators all have restrictions on their use in the form of an Advanced Resuscitation Certificate.

5. The use of Bag-Mask-Valve ventilators was also discussed at length and it was recommended that because these do not produce adequate ventilation for resuscitation in the field they should not be used by lifesavers. It is important for medical practitioners to remember that circumstances inside hospitals and resuscitation performed by lifesavers on a beach are totally different.
6. Resuscitation Report Forms as used by the Australian Surf Life Saving Association were tabled and the usefulness of the statistics gained from these forms applauded. All member countries in future will make strenuous efforts to obtain and collate statistics on their own resuscitations performed in an aquatic setting. The statistics obtained from collation of the Australian Forms were presented and covered 117 immersion victims of whom 40 died and 77 survived. Detailed analysis of the statistics will be reported in a suitable medical journal at a later date, probably when the numbers have increased a little.
7. PEEP in the field was considered especially because of the current availability of an Ambu PEEP valve which could be used outside hospitals, Professor Modell, who is a great advocate of PEEP in the management of immersion victims, was opposed to its use outside hospital and his opposition was echoed by all members of the Panel. Dr Modell felt that if PEEP were to be used outside hospital, the pressure level chosen would be absolutely arbitrary, the effect on venous return would be unknown, the effect on cardiac output would be unknown, and the likelihood of spontaneous pneumothorax or mediastinal emphysema was considerable. He believed that lifesavers were very much better advised to concentrate on prevention, rescue and immediate resuscitation than on PEEP.
8. The question of alcohol and aquatic activity was discussed briefly and a paper on this has now appeared in the *Medical Journal of Australia*, 24 June 1978.
9. The literature on epilepsy and immersion was reviewed and the statistics from the Australian Report Forms added to this. The Panel could find no evidence of an increased risk from swimming for well controlled epileptics.
10. The distended stomach frequently presents a problem to the lifesaver in that it is associated with considerable vomiting/regurgitation and some degree of impairment of diaphragmatic movement. Various lifesaving bodies have given different view points on the safety or otherwise of active drainage of the stomach in these circumstances and some lifesaving Organisations have recommended pressure on the epigastrium or left hypochondrium to assist in emptying the stomach. There was unanimous agreement amongst the Medical Panel that attempts

at drainage are very risky indeed and delay the proper institution of cardiopulmonary resuscitation. There was unanimous agreement that there should be no active efforts made by lifesavers to empty the distended stomach. It was further pointed out that the maintenance of a clear open airway will greatly diminish the risk of gastric distension with air during the performance of Expired Air Resuscitation.

11. Definitions of terms such as 'delayed drowning' and 'secondary drowning' present a problem to any doctor who follows the literature on immersion episodes, and the World Life Saving Medical Panel is attempting to clarify this very difficult field. Dr Jerry Hughes from California is the American representative on the Panel, and he has been given the task of communicating with some notable contributors to the medical literature asking their support in producing suitable definitions.
12. The precordial thump has been the subject of a great deal of talking and teaching over the years and is discussed at almost every meeting. The current recommendation of the American Heart Association, ie. that the precordial thump should not be taught to or practised by lifesavers. It plays no part in the management of hypoxic cardiac arrest and in such circumstances may well delay the institution of proper CPR.
13. The emergency management of impacted foreign body in the upper airway has been highlighted by the papers of Dr Heimlich and the subsequent spate of recommendations by various Organisations in North America. In the presence of two special guests from California, Dr Stanley Gold and Dr Jeffrey McDonald, the ever-changing recommendations of these Organisations and individual experts were reviewed and discussed. It was clear to the Meeting that there is not a uniform viewpoint on what should be done for emergency management of impacted foreign body, but it would seem, even now, that a sharp thump between the shoulder blades is still the best initial management. The Medical Panel felt that the use of eponyms was undesirable and served only to complicate the issue; the fundamental place of basic airway management was reaffirmed. It was also felt that the present stress on this subject was to the detriment of proper cardiopulmonary resuscitation and an analysis of the American statistics puts this into perspective. In the United States of America each year there are 700,000 myocardial infarction deaths, 8,000 drownings and an unknown number of near-drownings. Against this there is absolute maximum of 2,000 cases of sudden upper airway impaction. It was therefore felt that the various methods of disimpaction should only be taught at an advanced level and not as part of courses of basic life support.
14. There was no disagreement at all on the subject of the best position for the patient being transported. It was uniformly agreed that the unconscious, spontaneously breathing patient should be nursed and transported in the lateral position with maintenance of head tilt and jaw support.
15. Because of the frequency of vomiting during the post-immersion episode the Panel discussed the advisability of performing expired air resuscitation with the patient on his side. This is practised in Vancouver and Nova Scotia, but is not formally recommended by the Royal Life Saving Society of Canada. Member countries and their Medical Panels have been asked to investigate the feasibility of this manoeuvre and to stimulate any appropriate research programmes. There is no known published literature on this subject.
16. Dr Neil Goodwin from South Africa presented a paper on 'The Diving Reflex in Dolphins' and showed that in addition to the profound bradycardia there is a

gross drop in blood lactate when dolphins submerge with a dramatic rise in blood lactate when the dolphin resurfaces. An extension of this phenomenon to humans suffering from immersion may answer a query which has troubled water safety experts for years. If the same thing were to happen in humans, then it is reasonable to assume that on retrieval from the water a victim of near-drowning would develop re-perfusion of his limbs with distribution into the systemic circulation of accumulated muscle lactate accumulated because of grossly diminished limb perfusion during the period of immersion. This could worsen the already existing acidosis associated with profound hypoxia and cause either circulatory or respiratory arrest after rescue. The statistics of the Surf Life Saving Association of Australia reveal that for the four years under review, four patients who were breathing following retrieval from the water subsequently required expired air resuscitation and a further two patients who were breathing on retrieval from the water required cardiopulmonary resuscitation. Many individuals and organisations have noticed similar phenomena.

Suction apparatus as used on beaches was discussed and the Panel agreed that the Venturi type suction apparatus is of little or no help in clearing the airway of the patient on the beach. It was pointed out, furthermore, that this system was very wasteful of oxygen. It was further pointed out that the material found in the mouth of a victim of immersion is likely to be vomitus or regurgitant stomach contents and will therefore contain solid material. The use of the lateral position, gravity and the rescuer's fingers continue to be recommended as the methods of choice for removing foreign material from the patient's airway.

18. CPR on the beach was discussed at length and the Australian Surf Life Saving Association figures showing 13 immersion survivors following CPR on the beach were presented. There is a continuing stream of literature on cardiopulmonary resuscitation and this was reviewed. The recommendations from the Panel were:
 - (i) Ventilation to compression ratio 1:5 (2 operators)
 - (ii) Rate 60 per minute
 - (iii) No pause for ventilation
 - (iv) Ideally compression should occupy 60 percent of the cycle and relaxation 40 percent. In practice however, a ratio of 50:50 is easier to achieve.
 - (v) Short, jerky movements are to be condemned.
 - (vi) For one operator CPR in infants, the ventilation/compression ratio should be 1:5 (in adults 2:15).

19. The frequency of fractured neck occurring in the water has been highlighted by many experts and unfortunately to date the medical profession has made no great effort to advise lifesaving bodies on methods of removing a patient with a suspected broken neck from the water. Several members of the Medical Panel took to the beach at Corona del Mar with some highly trained lifesavers and practised methods of removing patients from the water in these circumstances.

The principles of preventing flexion and lateral movement of the neck were stressed but the practical difficulties became very obvious in surf conditions. Some photographs were taken but this is an area where teaching with film and video tape will be required.

20. Professor Modell's paper on the pathophysiology of near-drowning was more or less a summary of his most recent Journal articles. In addition he presented details of his approach to the modern therapy of near-drowning and gave his reasons for believing that prophylactic steroids and prophylactic antibiotics are, in his opinion, not indicated. Dr Modell was specifically asked to comment on a suggestion from New South Wales that children are less likely to drown in

salt water pools than fresh water pools, but he was not aware of any studies which suggested that this would be true. He knows of no evidence that children were more buoyant in salt water than fresh water.

21. The final session was a stimulating question-answer session involving all the experts. This session has been recorded on audio-tape and will be available in full in written form in the near future.

World Lifesaving will conduct its next Congress in 1982 and a final decision on the venue will be made in mid 1979.

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MUSSELS WITH A CURATIVE TOUCH FOR ARTHRITIS?

Marine pharmacologist John Croft and his wife have been working in New Zealand since 1971, their job being to advise on how to "farm" mussels. More than 1,000 tons yearly of the little green-lipped mussels are being reared on an island haven in New Zealand under their guidance, according to a press report. The protein extract from the mussels, which are larger than the normal species and green instead of blue, has no side effects and has been proved to take away pain and increase mobility. This property of the extract was apparently discovered by chance by American researchers looking for a cancer cure. The remedy is said to be in use in the UK and many other countries.

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CIGUATERA POISONING

The Queensland Health Department has disputed claims that an unusual number of ciguatera poisoning cases are occurring this year, though Dr Robert Endean was reported to have related an apparent increase to the eating of mackerel. He noted that while in previous years outbreaks had tended to occur in September and October, this year they had occurred in almost every month. A Health Department spokesman, while denying that more cases were occurring, traced the cause to mackerel caught in the Rockhampton, Bundaberg and Gladstone areas and ascribed it to the presence of seaweed as a factor in the contamination.

Symptoms of ciguatera include nausea, diarrhoea, dehydration, a sensation of tingling about the lips, tongue and throat (followed by numbness) and a pathognomic complaint of paradoxical sensory disturbance in which there is a reversal of hot/cold sensations. Extreme exhaustion and muscular weakness are common. Treatment is symptomatic.

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DREAMFISH

Norfolk Island has a special drug problem. The drummer fish gives people bizarre dreams and victims can develop the paranoid feeling that others are trying to hurt them.

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