Henry J. Heimlich, M.D.
Professor of Advanced Clinical Sciences

November 20, 1985

NOV 27 1985

Joseph P. Ornato, M.D.
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Dear Dr. Ornato:

Your letter of November 11, 1985 (received 11/18/85) and the enclosures confirm the facts stated in my letter to you of September 24, 1985. After cutting through the rhetoric, I note that, on Dr. Modell's suggestion, you have now restored the Heimlich Maneuver to the protocol for treating a drowning victim. Again, however, your report must be considered disingenuous and incomplete.

You now recommend the following statement:

> "Since the risk/benefit ratio of an abdominal thrust in this setting is unknown, the only time it definitely should be used is when the rescuer suspects that foreign matter is obstructing the airway". However, some believe that if the victim does not respond appropriately to mouth to mouth ventilation, a subdiaphragmatic abdominal thrust may be indicated, after which basic CPR should be reinstituted. (emphasis yours)
>
> Further investigation is needed to better define the need for, the risk of, and the timing of, an abdominal thrust in this situation."

That statement is deceptive. The majority of your panel, not "some," agreed at the Dallas conference (official conference tapes) and also in the post-conference letters you distributed with your letter of November 11, that the Heimlich Maneuver is the recommended procedure when the drowning victim does not respond promptly to mouth-to-mouth; not one panel member objected to that conclusion. Furthermore, you again conceal the volume of water aspirated by the drowning victim and, therefore, the need to evacuate that water.

Your unreasonable mention of the risk/benefit ratio of the Heimlich Maneuver, is a red herring. There is no significance to the risk/benefit ratio in the drowning victim who has not responded promptly to mouth-to-mouth, since the alternative is death. You seem to be concerned that as the Heimlich Maneuver will save lives, it will again prove the error of the ARC/AHA advisers for not realizing the need to expel water from the lungs. Newer, more advanced life-saving concepts can not be withheld in order to conceal that scientific error.

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Your first report, July 22, 1985, sent to the three participants on your panel, Drs. Modell, Steinman, and myself, which accurately describes our conclusions, is as follows:

NEAR-DROWNING -

The most important consequence of prolonged underwater submersion without ventilation is hypoxemia. Initially there is breath-holding, followed by swallowing large amounts of water, vomiting, terminal gasping with flooding of the lungs, and death. Aspiration of a moderate amount of water (up to 22 ml/kg body weight) occurs in 88-90 percent of drownings; 10-12 percent of victims do not aspirate due to laryngospasm....

5. Once the victim is out of the water, if:
   a) adequate ventilation is not achieved with rescue breathing and the victim does not respond despite repeated attempts with a proper head and jaw position; or

   b) there is evidence of airway obstruction;

   then an abdominal thrust as described by Heimlich is indicated.

For completeness and accuracy, the sequence should then read:

Some recommend that the Heimlich Maneuver be used first to expel water, vomitus, and debris from the lungs. (1-5,7) Others are concerned that the Heimlich Maneuver may cause aspiration of stomach contents if used as the initial treatment for drowning. (6)

Your July 22 report with the addendum is in keeping with your panel's recommendations and the conclusions you presented at the plenary session of the conference as recorded on the official conference tapes. (It would be more accurate if you had not modified Dr. Modell's descriptive words, that the Heimlich Maneuver should be used if the near-drowned victim "does not respond promptly" to mouth-to-mouth) (See official conference tapes: available from Eastern Audio Associates, Inc., 6330 Howard Lane, Elkridge, MD 21227)

You offer no post-conference reference or scientific evidence that warrants changing your July 22 report with my addendum added. As stated above, the majority of your panel is in agreement with that report; not one objects. The letters you enclosed on November 11, 1985 confirm this fact.

Dr. Modell's letter of October 18, 1985, to Dr. Ornato:

Dr. Modell confirms his continuing agreement with me, as he stated at the Dallas conference panel meeting, that the Heimlich Maneuver should be used when the drowning victim does not respond promptly to mouth-to-mouth. Dr. Modell and I constitute the majority of the panel of three participants.

Your original report of July 22, 1985 (except for the absence of the words "does not respond promptly") plus my addendum are complete and accurate statements consistent with the scientific decision of the majority of your panel, your report to the conference, and Dr. Modell's letter to you of October 18, 1985.

Dr. Steinman's letter of October 12, 1985 to Dr. Ornato:

Dr. Steinman expresses concern with the use of the Heimlich Maneuver as a first

step in treating drowning, but does not comment on its use after mouth-to-mouth fails. That was his position at the panel meeting and it does not require alteration of your original July 22 report with my recommended addendum.

Once again, no panel member disagrees with the recommendation that the Heimlich Maneuver be used when the drowning victim does not respond to mouth-to-mouth, and the majority support that conclusion.

Dr. Nemiroff's letter of October 18, 1985 to Dr. Ornato:
Dr. Nemiroff, who was not a member of the panel, states in his letter that his subordinate, Dr. Steinman, was his personal representative and that they are in agreement. The statement above concerning Dr. Steinman's viewpoint, therefore, stands.

Dr. Nemiroff lists in detail the items in my letter of September 24, 1985, concerning your actions, all of which are documented. He then derides the reference in my letter to your quoting "secret majorities." But Dr. Nemiroff also describes the process by which your decisions were reached. He speaks of conference telephone calls between him, yourself, Drs. Modell, Steinman, and Mr. Dail. It apparently did not strike him as being irregular that I was excluded from those conference calls and received no phone calls. Yet, despite the fact that I was kept unaware of these conferences, Dr. Nemiroff concludes that he believes the most recent statement in your report reflects my views.

Mr. Dail's letter of October 25, 1985 to Dr. Ornato:
Mr. Dail, a nonmedical Red Cross observer, states in his letter that he accepts the panel report attached to your October 8, 1985 memo and refers to your phone conversation on October 12, 1985. I did not receive your memo, a panel report of that date, or a phone call from you.

It is now clear that there has been a secret conference and reports in which Mr. Dail, a nonmedical Red Cross official, participated in reaching a supposedly scientific decision and I, a panel member, was excluded. As a matter of fact, I was not aware of your conference or decisions until this time, a month-and-a-half after Mr. Dail's participation. Mr. Dail may be concerned about Red Cross liability for their first aid instructions which have been designated as hazardous and lethal, but that consideration has no place in the scientific decision-making process.

In my previous letter, I quoted the statement made by Dr. James Jude at the 1985 Dallas Red Cross/Heart Association Conference. He described a meeting, concerning the treatment of choking, of a similar ARC/AHA committee in 1976, that lasted until 2:00 AM, discussing, not the scientific evidence, but the name Heimlich Maneuver. (See official conference tapes) I was not at that post-conference meeting either, but the similarity to the furtive process you and your collaborators have engaged in is obvious. The changes made in your reports since your original July 22 recommendations are in keeping with those of your predecessors, even to your manipulation of the name of the procedure.

Mr. Dail also was a nonmedical participant in 1976, at the meeting which perpetuated for ten years the recommendation of back blows, chest thrusts, and abdominal thrusts for the treatment of choking. As you know, on October 1, 1985, the Surgeon General of the United States designated those ARC/AHA methods as "hazardous, even lethal" and advised the Red Cross, Heart Association

and public health authorities that only the Heimlich Maneuver should be used for the treatment of choking.

Your post-conference discussions, from which I was excluded, reached nonscientific conclusions and concealed previous errors. If such conclusions are not corrected prior to publication, be assured that the scientific community, your institutions, and the public will be made aware of the errors and the manner in which they were derived, rather than permitting drowning victims to be subjected to ten years of "hazardous, even lethal" measures.

Dr. Modell's letter speaks of the volume of water aspirated by a drowning person. He objects to my saying "as much as" 22 ml/kg (10 ml/lb body weight) is aspirated by drowning persons. (That expression actually appears in Dr. Ornato's July 22, 1985 report.) Dr. Modell prefers to say "less than" 22 ml/kg is aspirated. No matter; both expressions prove that up to 1000 ml of water is aspirated by a 100 lb drowning victim and up to 1500 ml by a 150 lb individual. Those figures are based on Dr. Modell's studies and cannot be concealed by words like "a modest amount" as Dr. Ornato did in his final report. Dr. Modell states that there is "a small amount of water" aspirated "in some cases," but omits his other published results, that <u>more than</u> 22 ml/kg of body weight was aspirated in 15% of his cases. <u>Once again, Dr. Ornato, based on Dr. Modell's publications and his letter, your July 22 report regarding the amount of water aspirated, including "flooding of the lungs" is correct and must stand, not be concealed</u>.

Furthermore, every milliliter of water aspirated by a drowning person exacerbates the hypoxia that causes death. All alveoli and bronchi that are blocked by water, which is a foreign body, produce a shunt -- blood passes through non-ventilated alveoli and returns to the arterial circulation unoxygenated. Haynes (8) states, "Hypoxemia follows aspiration of small amounts of water and is seen experimentally with aspiration of 2.2 ml/kg of either fresh water or salt water." One ml/lb or 100 cc in a 100 lb individual, which is one tenth the volume of water that Modell refers to, is sufficient to cause hypoxemia. Haynes also states, "Contributing to hypoxia may be aspiration of bacteria, algae, sand, particulate matter, emesis, and chemical irritants." That is another good reason for using the Heimlich Maneuver to evacuate water.

Dr. Modell's glass of water is misleading. It is not the volume of the lungs that is significant: it is how many alveoli or bronchi are obstructed and where the water is located. An adult's trachea can be totally obstructed with 150 ml of water, preventing any air from getting to the lungs, and there will still be enough water left over to fill the nose and throat.

In 1981, Dr. Modell wrote an article entitled "Is the Heimlich Maneuver Appropriate as First Treatment for Drowning?", and referred to the "Heimlich Maneuver" throughout the paper. (6) At your panel meeting in Dallas, he referred to the procedure as the "abdominal thrust described by Heimlich" as you did, Dr. Ornato, in your conclusions reported to the Dallas conference and in your written July 22 report. Your subsequent reports use only the words "abdominal thrust." Now you and Dr. Modell use "subdiaphragmatic abdominal thrust." A reader of your letters and reports will very likely be curious as to these frequent changes; the ARC/AHA instructors and students will undoubtedly be totally confused. The following background clarifies the motive behind these blatant inconsistencies.

In 1974, editors of the Journal of the American Medical Association (JAMA) named the Heimlich Maneuver and, in 1975, the Heimlich Maneuver was officially endorsed as such by an AMA commission. The Red Cross adopted the Heimlich Maneuver as a treatment for choking in 1976 but also recommended back blows and chest thrusts; I immediately denied the Red Cross use of my name as I did not wish my method to be blamed for the deaths that occurred. The Red Cross, therefore, has used the name "abdominal thrust." On October 1, 1985, the Surgeon General of the United States issued a release stating abdominal thrusts are "hazardous, even lethal." Surgeon General Koop wrote that "abdominal thrusts, because they refer to blows to unspecified locations on the body, have resulted in cracked ribs and damaged spleens and livers, among other injuries. The best rescue technique," Dr. Koop said, "is the Heimlich Maneuver." Drs. Modell and Ornato now appear to be responding to the Surgeon General's directive by calling the Heimlich Maneuver a "subdiaphragmatic adbominal thrust," rather than accepting his official recommendation.

In July 1985, I advised the president of the Red Cross that, since back blows and chest thrusts have been withdrawn, they may now use the name "Heimlich Maneuver."

You describe your fruitless search "through Index Medicus and the indexes to JAMA for the last twenty years" for documented case reports in JAMA, and conclude that the evidence "is not where you say it is in the literature." As Dr. Patrick informed you in his letter of September 4, 1985, after he answered your equally defamatory false accusations concerning his patient care and published report, "You should have telephoned or written to me for this information." You cannot escape the objective evidence that exposes scientific errors by ignoring its documentation in scientific publications or by not seeking the references from the source. The scientific references that follow are readily available to you.

You are in possession of a reprint of the work of Edward A. Patrick, M.D., Ph.D. and have referred to it, albeit ignominiously, in your letter of August 23, 1985, yet egregiously omit referring to it in your November 11th letter. Dr. Patrick, Professor of Electrical and Computer Engineering, University of Cincinnati, who is also an emergency medicine physician, reported a study based on a prospective protocol. Dr. Patrick documented that the Heimlich Maneuver expelled water from the lungs of a two-year-old drowning victim who recovered as a result. The child had been submerged in a lake for 20 minutes, had mouth-to-mouth and bagging for 20 minutes, and was intubated and suctioned without avail. The Heimlich Maneuver expelled water from the lungs, as evidenced by its emergence from the endotracheal tube, resulting in breath sounds not previously present and subsequent recovery. (1) Should you omit this reference from the AHA report to be published in JAMA, it will identify that AHA report as being deceptive and incomplete.

The JAMA reference you could not find appears in Index Medicus under "Heimlich, HJ." That was my first definitive paper on the Heimlich Maneuver. That article and another published in Clinical Symposia quote from a report by Victor Esch, M.D., Chief Fire Surgeon, Washington, DC, and adviser on water safety to the Red Cross, who also provided detailed documentation. Dr. Esch, an eminent medical authority on drowning, documents the case of an apneic, unconscious drowning victim brought ashore by a lifeguard. He used the Heimlich Maneuver, water gushed out the mouth, and the victim recovered. Dr. Esch

stated that he proved there was water in the lungs and said, "It [the Heimlich Maneuver] may open up a new vista of resuscitation. It does no good to do standard mouth-to-mouth breathing if there is water in the lungs or debris in the trachea from vomiting. The air won't get through." (2,3)

The six cases that you mention in your letter, where the Heimlich Maneuver saved drowning victims, and additional cases other than the two described above, were documented in reports from highly qualified emergency medical technicians, paramedics, lifeguards, and one scientist, a fact so reported in the literature. (2,3,4,5) In no known instance has the Heimlich Maneuver resulted in vomiting or aspiration.

Another scientific paper known to you cites eleven references documenting that intermittent upward pressure on the diaphragm, as in the Heimlich Maneuver, expels water from the lungs. (5)

Mouth-to-mouth was introduced in 1960 and drowning deaths have increased every year thereafter. You state that there are 80,000 near-drowning "incidents" per year in the United States and 8,000 fatalities. You may wish to document how many of the 80,000 were unconscious and apneic, then revived after mouth-to-mouth, and the number who required no emergency treatment and recovered spontaneously. That exercise is not really necessary since no one is suggesting that mouth-to-mouth be abandoned: the rescue breathing technique is extremely valuable providing it is not relied on to the exclusion of the Heimlich Maneuver. In any case, your panel agrees that some of the 8,000 deaths can be prevented by using the Heimlich Maneuver.

Those who formulate the recommendations for the Red Cross and Heart Association made a scientific error 25 years ago in not expelling water from the lungs of drowning victims. To now conceal and perpetuate that error by denying that aspirated water causes hypoxia in drowning victims will diminish the credibility of their own institutions, which are responsible for reviewing and authenticating the scientific decisions of their staff. These institutions include universities, hospitals, the Coast Guard, the ARC, and the AHA, all of which are publicly funded, therefore responsible to the public.

The competence of the process used by the AHA/ARC and the content of their first aid instructions is being called into question by events described in this letter, documentation in the official Dallas conference tapes, your reports and letters, and the post-conference letters you enclosed in your letter of November 11. The clandestine pattern of operation -- revealed in the process being used to determine the treatment of drowning -- is consistent with that previously used to derive the treatment of choking. That modus operandi led, in the Surgeon General's words, to "hazardous, even lethal" recommendations by the ARC/AHA.

Similar practices resulted in persistent errors in recommended CPR techniques. A substantial number of physicians, scientists, and public health authorities are concerned with this situation. We are prepared to seek further investigation of ARC/AHA methods should the ARC/AHA not insist that its representatives abide by established objective scientific procedures. Not one more life must be lost unnecessarily.

Your complete July 22 report with my addendum is an accurate and complete rep-

resentation of scientific knowledge and your panel's majority decision. Should you choose to alter the wording so as to diminish support for the use of the Heimlich Maneuver, those who participate in that nonscientific decision will be liable for drowning deaths following the unsuccessful use of mouth-to-mouth. My position is on record in regard to the scientific facts and the process taken by you and your collaborators.

REFERENCES

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6) Modell, JH: Is the Heimlich Manuever appropriate as the first treatment for drowning? Emerg Med Serv 10:63, 1981.
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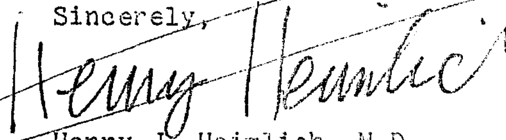
8) Haynes, BE: "Near Drowning." Ch. 50 in Emergency Medicine, ed. by Tintinalli, JE et al. (New York: McGraw Hill, 1985), p. 383.

Sincerely,



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HJH/jh

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