A DEATH MASK TO HELP SAVE LIVES
(The Story of Resusci-Anne)
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It was in the winter of 1960, and I had finished my lecture and paused to answer questions from the audience of doctors. Then, as I left the platform, a listener moved forward quickly, grasped my sleeve, and blurted out,

"Dr. Gordon! You've got to come with me. Right now!"

Without further explanation, he pushed me from the auditorium, rushed me down two flights of stairs and out into the noisy congestion of late afternoon Manhattan traffic. The hasty exit had brought me out into the brisk mid-December air without a coat. A light snow was falling as I was maneuvered toward the curb. My abductor hailed a taxi and pushed me in ahead of him. He looked at his watch and shouted to the driver,

"We've got to get to the Metropolitan Life Insurance Building before five o'clock."

As the cab lurched forward and dodged through snarls of traffic, there was now time for an explanation.

"I'm sorry, Dr. Gordon, but I just had to get you out of there and over to the Metropolitan Life while this Norwegian is still there."

"What Norwegian is still there? I asked. "And, why do I have to see him?"

"He's a doll maker and he's showing a manikin he made for teaching mouth-to-mouth resuscitation. I knew you'd be interested."

I knew you'd want to see it."

He was right. I was interested. I did want to see it. But, I did resent being shanghaied this way.

My well-meaning friend knew of the extensive research in the field of resuscitation which had been performed by Dr. James O. Elam, Dr. Peter Safar and myself. These studies had established the unequivocal superiority of mouth-to-mouth ventilation and mouth-to-nose ventilation over all manual methods. Experimental and clinical corroboration of this work had led to the 1957 recommendation by the National Research Council that exhale ventilation was the preferred method for infants and small children requiring artificial respiration. In 1968, they had revised this recommendation to include all persons requiring emergency resuscitation. Subsequently, this method was accepted by the American National Red Cross, U.S. Public Health Service, U.S. Department of Defense, and all other national and federal agencies concerned with artificial respiration. Ultimately, these recommendations were accepted internationally. But, still, there was no really effective method for training people to perform mouth-to-mouth breathing. How could we teach large masses of the population to save lives with this method? What we needed was a training manikin which was practical, inexpensive and anatomically correct.

Our taxi arrived at its destination and we hurried upstairs to the auditorium. There on the stage was the doll maker with his protege. Soon, the official presentation was over and we moved onto the stage to meet the Scandinavian visitors.

There I met Aamund S. Laerdal, a Norwegian toy and doll maker and a book publisher from Stavanger, fishing village along the coast on one of the southernmost fjords. He had also made imitation wounds, or moulages, for the various armed services throughout Europe. His expertise in these fields had led the Norwegian Society of Anesthesiologists to seek him out and ask him to create a device for teaching mouth-to-mouth and mouth-to-nose resuscitation. The result was Resusci-Anne who now reposed on the table before us.

Resusci-Anne was a life-like, life-size manikin dressed in a blue ski outfit. Her face had the unblemished smoothness of a model. It was crowned with natural appearing honey blond hair. Her features were tranquil and entrancing, closed eyelids, a quiet yet puzzling expression, an unfathomable smile, sad yet happy.

When her neck was lifted and her head tilted backward into maximum extension, her lungs could be inflated through her mouth or nose. With each inflation her chest rose and fell. The rescuer could tell by watching the chest rise and fall, by feeling the lungs expand and by hearing the air escape during inhalation that adequate ventilation was being achieved with each breath. If the head was not extended adequately, the airway became obstructed just like in real-life. The appearance and performance were near-perfect.

The shy Norwegian toy maker was delighted with our enthusiastic interest. In his precise English, he detailed Resusci-Anne's background, the role of the Norwegian Society of Anesthesiologists, and his purpose in bringing her to the United States.

"I thought she would be of great interest in this country where so much work has been done on artificial respiration. I have shown her to the American Red Cross and the Department of Defense. Dr. Safar saw her yesterday in Baltimore, and I will show her to Dr. Elam tomorrow here in New York. I would like to visit Dr. Gordon, but he is in California and I will not have time to go there."

At this point I introduced myself to the astonished Aamund Laerdal and told him of the unusual circumstances that resulted in my being in New York at this time and being drawn to this meeting with him and his Resusci-Anne. Then I asked him about the face which made her so appealing.

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** Dr. James O. Elam is Professor of Anesthesiology, University of Chicago School of Medicine. At that time he was Chief of Anesthesiology, Roswell Park Memorial Institute, Buffalo, New York.

*** Dr. Peter Safar is Professor of Anesthesiology, University of Pittsburgh School of Medicine. At that time, he was Chief of Anesthesiology, Baltimore City Hospital.
He responded that in addition to the original criteria set up for the training manikin, he had added that it should be life-size, life-like in appearance and esthetically appealing. As the manikin evolved, he could not find a face which really satisfied him. Then, one day while visiting his in-laws home, he saw on the wall the death mask of a young girl. He was immediately intrigued by her mystical beauty. It struck him that this mask of a person taken by death in her youth would make an ideal face to use for teaching people how to save lives.

This death mask was reputed to be the face of an unidentified young woman found drowned in the Seine River in Paris. There was no evidence of violence and it was assumed by some that she had drowned herself. Her ethereal smile entranced the beholders and many stories were fabricated to explain the death of one so young and so beautiful. The circumstances surrounding her demise were never established, but some of these stories found their way into print. This enigmatic mask thus became the face and personality of Resusci-Anne.

The day after my meeting with Asmund Laerdal and Resusci-Anne, we met again, this time with Hans H. Dahl, then Executive Secretary of the Norwegian-American Chamber of Commerce. We took Resusci-Anne to a studio where she was photographed. Arrangements were started to bring duplicates of this unique manikin into this country for training purposes. Plans were formulated to convene a conference on resuscitation in Norway. Our hopes were high that a means had been found to assure resuscitation of the near-dead by providing adequate training in mouth-to-mouth and mouth-to-nose ventilation for large masses of the populace.

Time and events have justified these hopes.

The First International Symposium on Resuscitation was held in Stavanger, Norway in August, 1961, and its recommendations were published shortly thereafter in the Journal of the American Medical Association. That same year, Dr. James R. Jude, Dr. G. G. Knickerbocker, and the late Dr. William B. Kouwenhoven from the Johns Hopkins University School of Medicine developed the technique of external cardiac compression to provide artificial circulation without opening the chest. Resusci-Anne was modified so that she also had a compressible chest and a sponge rubber heart which produced a palpable pulse in her neck when artificial circulation was performed effectively. She became the basic tool in providing training in cardiopulmonary resuscitation for doctors, nurses, industrial workers, and rescue groups in a nationwide program carried out by the American Heart Association and its affiliates and chapters.

Since her introduction, an estimated one hundred million people throughout the world have been trained on seventy thousand copies of Resusci-Anne. Countless thousands of lives have been saved. The mask of death has become a tool to save lives. Black and oriental models have been made, but the original Resusci-Anne persists in popularity. She has become a companion to Boy Scouts, high schools, medical facilities and EMS groups. Numerous articles have been written about her. Her picture has appeared in newspapers throughout the world. Erroneous stories have been circulated about her (such as the incorrect but dramatic one that the death mask was really from one of Laerdal's children). Indeed, this death mask has not been an inanimate plastic object but, rather, it has given Resusci-Anne a distinct personality and has brought the gift of life to many thousands who have been resuscitated from near-death.

As a natural consequence of her personality and popularity, Resusci-Anne has been catapulted into movies. She has had starring roles in three major medical films made in this country, as well as lesser roles in other films produced here and abroad. In "Breath of Life" she is used to show school children, non-medical groups and first aiders how to perform artificial respiration. "Pulse of Life" features her to paramedical and rescue groups for training in heart-lung resuscitation. Doctors and nurses see her in the film, "Prescription for Life" which deals with definitive treatment as well as emergency measures for cardiac arrest cases. These films have been translated into nine foreign languages and are used internationally along with Resusci-Anne.

Through the years, Resusci-Anne has acquired a family. Resusci-Andy is her male counterpart. Resusci-Baby is an infant manikin properly scaled for the practice of infant resuscitation. Anatomic Anne has a trachea, bronchial tubes, sternum, lungs, heart and major blood vessels which show ventilation of the lungs and circulation of the blood when resuscitation procedures are performed. Another member of the "Resusci" family is Arrhythmia Anne. She has an electronic heartbeat which can be displayed on an electrocardiograph or an oscilloscope. When her normal heart rhythm is programmed into a series of potentially lethal rhythms, use of an electronic DC defibrillator or synchronizer on her bare chest can convert her heart tracing back to normal. If this fails, the trainee can apply cardiopulmonary resuscitation. All of these modifications of Resusci-Anne have the same ethereal beauty of the young woman found in the Seine.

In 1966, Resusci-Anne and part of her family were present in Washington, D.C. at the First Conference on Cardiopulmonary Resuscitation of the National Academy of Sciences - National Research Council which made comprehensive recommendations regarding all aspects of cardiopulmonary resuscitation. And, in 1967, a Second International Symposium on Resuscitation was held in Norway, again bringing authorities on resuscitation to this land where a toymaker created Resusci-Anne with an unknown's death mask which was destined to help save countless lives.

* "Die Unbekannte" (The Unknown) by Reinhold Conrad Muschler. Copyright 1936, by Wilhelm Heyne Verlag, Dresden, Germany.
** Mr. Dahl is now President of Laerdal Medical Corporation, Armonk, New York.
*** Dr. James R. Jude is now Professor of Surgery (Thoracic Division) at the University of Miami School of Medicine. Dr. G. Guy Knickerbocker is now on the staff of the Emergency Care Research Institute (ECRI) Plymouth Meeting, PA.