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Stig Holmberg

"How does it feel to be so small?" This question was addressed to Stig on the day of his retirement, when a couple of hundred people had assembled to acknowledge his skilful work over the years. "I don't understand what you mean", was the reply. "It's you guys who are unnecessarily tall."

Stig was born in 1927 and started his medical career as a surgeon in the north of Sweden. He came to Sahlgrenska University Hospital in Göteborg in 1962 at the age of 35. Here, he started working in internal medicine but switched to cardiology in 1963 and continued as a cardiologist at this hospital until he retired in 1992.

I first heard about Stig Holmberg a few months after having started to study medicine in 1969. My older brother, who was 3 years ahead of me, had come to study internal medicine. There he heard of a physician who always had a knife in his belt. He used it, as my brother said, "to open the chest of people who were dying". My brother was quite right. For many years, Stig Holmberg had a personal pager and each time there was a presumed cardiac arrest and pulseless electrical activity in the hospital, he was called upon to "open the chest" and do "internal chest compressions". These happenings were mostly major events and a great many people were involved. Later on, as a junior cardiologist, I was allowed to "feel the heart beat with my own hands" during such events.

As a junior cardiologist at the coronary care unit, it was routine to call Stig even at night when there were problems, even if he was not on call. That was the way he wanted it to be. As the person who built up the Coronary Care Unit at Sahlgrenska University Hospital, he was keen to teach the nurses to defibrillate ventricular fibrillation as early as possible. He, therefore, introduced the concept of "one Holmberger", which was the maximum allowed time from the onset of ventricular fibrillation until defibrillation. It corresponded to the length of an ECG strip (50 mm/s) from top to toe.

Stig was an elite gymnast. One morning, when he was walking into the coronary care unit, he was stopped by the cleaning woman who said that the floor had just been polished. Stig, however, was not put off and walked on his hands through the department.

Stig was very competitive. When we had just started a pre-hospital study with fibrinolysis in 1986 and I arrived at the Coronary Care Unit with the first recruited patient, I met Stig and he asked me immediately how soon after the onset of symptoms we had started infusion. "After 37 minutes," I said. He replied, "37 minutes—you have broken the world record!"

Stig introduced the Mobile Coronary Care Unit to Sweden with an enormous amount of energy and stubbornness. When this goal had been achieved, he and Bertil Wennerblom performed a unique study in the late 1970s. They instructed the dispatchers to use envelope randomisation to allocate patients with a presumed acute myocardial infarction to be transported by a mobile coronary care unit or by a standard ambulance. At that time, the treatment available in the mobile care unit was morphine, furosemide, atropine, lidocaine and defibrillation. They were able to demonstrate improved survival among patients transported by the Mobile Coronary Care Unit during 5 years of follow-up—a unique documentation for the future.

His great mission, for which he will always have a specific place in Swedish medical history, is his life-long work on resuscitation. In 1987, he suggested to the Swedish Cardiac Society that a working group for resuscitation should be set up. He was the Chairman of this group until 2005. With great support from his colleague Lars Ekström and a number of nurses, led by Marianne Jarlöv, he initiated education in cardiopulmonary resuscitation in Sweden,

according to the cascade principle. Stig has been the brain behind the large number of Swedish pioneering educational programmes in cardiopulmonary resuscitation. These programmes were often created in collaboration with Laerdal (an example of how fruitful collaboration between the medical profession and industry can be at its best).
Stig's vision was that knowing how to perform CPR should be as natural as knowing how to swim. Today, 20 years later, he can harvest the fruits of his efforts.
Among patients suffering from bystander-witnessed, out-of-hospital cardiac arrests in Sweden, cardiopulmonary resuscitation is started by a bystander prior to the arrival of the ambulance in about 50% of cases.
In 1990, Stig persuaded the majority of ambulance chief physicians in Sweden to create a National Registry of out-of-hospital cardiac arrests in the country. Today, 15 years later, this registry includes about 45,000 patients suffering from out-of-hospital cardiac arrest.
In the same year (1990), again with Lars Ekström and Marianne Jarlöv, he started a development project designed to improve the treatment of patients suffering from in-hospital cardiac arrest at his own hospital. He demanded resources from the hospital management committee in order to create special training for employees for this purpose. He threatened to sue the hospital management for every single case of cardiac arrest within the hospital where an unnecessary delay until the start of treatment could be demonstrated.
This work has resulted in an effective organisation with very high survival after in-hospital cardiac arrest.
During the last few years, he has (he is now 77 years old) conducted national surveys of how various hospital organisations in Sweden function with regard to the handling of patients with in-hospital cardiac arrest.
With regard to this work, he has recently sent a report, supported by his data, to the Swedish National Board of Health and Welfare to inform them that, in all probability, at least 600 patients die each year in various hospitals in Sweden from in-hospital cardiac arrest due to unnecessary delay until the start of treatment, a delay which could be prevented if hospitals introduced automated external defibrillators in non-monitored wards. He is still waiting for a reply.
Over the years, Stig has been involved with a large number of patients suffering from cardiac arrest. Here is a brief description of the most spectacular case.
In 1987, Stig was working temporarily as a general practitioner in the north of Norway. One busy morning, a 50-year-old woman presented at the surgery with thoracic pain, which she had developed during Christmas shopping. She was immediately taken to the ECG room, where she developed a cardiac arrest with ventricular fibrillation. In 1987, not all surgeries were equipped with defibrillators and, in this case, the closest defibrillator was situated eight Swedish miles (80 km) away in a mine. Stig, who had obviously anticipated that the situation could occur at sometime in his career, remembered the times when all the defibrillators used alternating current, and quickly instructed two colleagues to perform CPR and sent a nurse to the nearby department store to buy aluminium foil. He himself took to dismantling a lamp cord to which he attached two electrodes made of aluminium foil. He quickly put the plug in and out of the electrical socket. Initially, there was no effect on the life-threatening rhythm, but after a while sinus rhythm was restored and the woman regained consciousness. She was then transferred to a secondary centre and was treated for her myocardial infarction. She was alive and well at least 15 years after this event.
Stig was one of the founders of the European Resuscitation Council. He was the first chairman of the Basic Life Support Working Group, which published the first educational

programme on CPR. As a sign of his attention to detail several days were spent describing the best way of placing the victims arms in the “recovery position” This was a “classical event” in the history of the ERC.
He is still a member of the ERC executive committee and continues to have a major input into resuscitation in Sweden and Europe.
Stig is still very active, but he has problems leaving his main area of interest. He is truly a visionary giant in the field of cardiopulmonary resuscitation.