

Professor Frank Pantridge

JAMES FRANCIS "FRANK" PANTRIDGE, MD, CBE

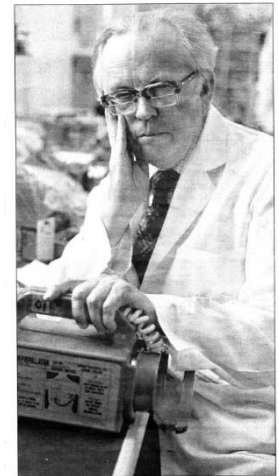
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Professor Pantridge and Dr Geddes of the Royal Victoria Hospital in Belfast produced the first portable defibrillator in 1965. A mains (AC) powered defibrillator was powered by an inverter, which converted a 12V car battery to 230 volts.

The unit weighed 70 kg. By 1968 he had designed an instrument weighing only 3 kg, incorporating a miniature capacitor manufactured for NASA. He went on to install the portable defibrillator in an ambulance, this creating the pre-hospital coronary care unit known as the Pantridge Plan.

Its descendants are now used countless times daily across the world to save many lives.



Professor Frank Pantridge. Picture by Pacemaker Press



Dr Pantridge is often referred to as the 'Father of Emergency Medicine' or "Grandfather of Prehospital ALS", and his plan was rapidly adopted in the USA and elsewhere. Hospital-based defibrillators were already being used in North America, but Pantridge doubted their impact, since data had shown that most sudden cardiac arrests happened outside the hospital. It was known that most coronary deaths resulted from ventricular fibrillation. He believed that immediate correction of v-fib could and should be done at the scene of the event. However, a major

problem was that defibrillators of the time could only be operated using main power supply. Using his research, he developed the first portable defibrillator—a svelte model that was powered by car batteries and weighed 70 kg.

With this new tool, the Belfast treatment system became adopted throughout the world. Pantridge believed defibrillators needed to be as prevalent as fire extinguishers, and that if nonphysician responders could do CPR, then they could use defibrillators. To make the devices safer, Pantridge and his colleagues worked to improve the design, and after harnessing a miniature capacitor manufactured for NASA, he was able to create a defibrillator weighing only 3 kg. Pantridge's portable defibrillator would become a key tool in EMS, and after further refinement it has become the automated external defibrillator (AED), the cornerstone of response to cardiac arrests. Pantridge served on EMS Magazine's editorial advisory board for several years.

A 1967 editorial in the medical journal 'The Lancet' stated Pantridge and his colleague at the RVH, John Geddes had revolutionised emergency medicine. However, it was not until 1990, almost 25 years after he installed the first defibrillator in a Belfast ambulance that Secretary of State for Health Kenneth Clarke announced £38 million was to be made available to equip all frontline ambulances in England with the equipment.

Professor Pantridge was born in Hillsborough, County Down, Ireland, on October 3, 1916. His forebears were small landowners. He attended the Friends School then graduated in medicine from Queens University in 1939. He became a Medical Officer with an infantry battalion after joining the army at the outbreak of the Second World War and received an immediate award of the Military Cross for his work during the Battle of Singapore. He was captured when the city fell to the Japanese and spent much of his captivity on the Siam-Burma railway, including some months in the notorious "death camp", Tanbaya, - an experience which was to haunt him for the rest of his life. His interest in cardiology may have been initiated during this time when he survived the usually fatal cardiac beri-beri.

He returned to Belfast in 1945 but could obtain only an appointment as an adjunct lecturer in the Queens University Department of Pathology. He then obtained a scholarship to the University of Michigan where he worked with F. N. Wilson, the world authority on electrocardiology of the time. He returned to Belfast in 1950 and was appointed Physician at the Royal Victoria Hospital where he remained until his retired in 1982, quickly establishing an internationally renowned cardiology unit.

He was awarded the CBE in 1978.

PANTRIDGE 15-manufactured for Belfast by the Coleraine Instrument Company featured rechargeable ni-cad batteries which could deliver upwards of 70 shocks. weight 15 lbs.,



PANTRIDGE 280 – Professor Anderson (left) showing one of the early lightweight systems developed in Belfast, and subsequently manufactured for them by Cardiac Recorders of London.

The unit was designed to specifications developed and prototyped at the Royal Victoria Hospital in Belfast.

This unit weighed only 7.5 lbs and became the first truly lightweight portable defibrillator for emergency services. 600 units were sold in the USA alone.



FIRST CARDIAC AMBULANCE- BELFAST IRELAND



Former ambulance personnel Mr. Robert Warwick and Mr. Tony Bell with the original Pantridge Defibrillator. US10-745SP



The 1967 Karrier Ambulance. US10-746SP

Karrier Ambulance Fleet No. 331. This type of ambulance was a familiar sight on the streets of Belfast during the 1960's and 70's as it was the standard accident and emergency ambulance in the city. However, number 331 was particularly special as it was the world's first purpose built cardiac ambulance which put into practice the Professor's pioneering concept of bringing emergency coronary care to patients.