

Portable ECG machine

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The science of the electrocardiograph / electrocardiogram (ECG) is one of the cornerstones of modern cardiology. Its potential for applications in patient care was realised by the development of device (machine) that could record the ECG.

As early as 1676, scientists discovered that animals generate electricity. In 1887, Waller was the first to demonstrate electrical currents are produced during beating of the human heart and can be recorded from the skin's surface. He was credited with having performed the first ECG on a human. The potential for application in patient care was demonstrated when Einthoven, a Dutch physiologist, invented the first ECG machine in 1903. It was much more sensitive. For his achievements, he was awarded the Nobel Prize in Physiology or Medicine in 1924. He also assigned the letters P, Q, R, S, and T to the various deflections (www.ecglibrary.com/ecghist.html).

The original machine required water cooling

for the powerful electromagnets, needed five people to operate, and weighed some 270 kg. The person monitored had to place each limb in a bucket of salt water and it was therefore not practical for clinical use. However, there have been many advances in ECG recording over the years. The instrumentation has evolved from a cumbersome laboratory apparatus to compact electronic systems, which are reliable and portable and often include computerised interpretation of the tracing.

It is not known when exactly ECG machines first arrived in Hong Kong. However, ECG recording was available when Queen Mary Hospital opened in 1937 (www.hkcchk.com/history.php). The Sanborn Viso Cardiette Electrocardiograph, model 51, in the Museum's collection (Figure) was a portable ECG machine donated to the Museum by the Victory Medical Laboratory Ltd / Dr HP Yew. It might be one of the earliest portable ECG machines used in Hong Kong.



FIG. Sanborn Viso Cardiette Electrocardiograph Model 51, specially made for Dr HP Yew. It was donated to the Museum by Victory Medical Laboratory Ltd, founded by Dr Yew in 1949. Dr Yew trained in cardiology at the Johns Hopkins Hospital, came to Hong Kong in 1948, and set up his practice at Victory House on Wyndham Street