

MEDICINE

Man Revived Five Times

➤ A 67-YEAR-OLD man who was revived five times within two hours after his heart stopped beating at Georgetown University Hospital in Washington, D. C., owes his life to a new machine called a cardiactivator. It massaged his heart externally, causing the blood to flow again.

Lester T. Garrison, a retired employee of the U. S. Department of Agriculture living in Vienna, Va., was admitted to Georgetown about the first of August with a dilated aorta, the major artery leading from the heart. Drs. Charles A. Hufnagle and Peter W. Conrad treated the aneurysm, but soon after the patient was admitted, he had a coronary attack that completely stopped his heart not once but five times.

The cardiactivator was new to the hospital. It had been tried only once before on a heart patient who was too near death to be saved.

The machine has an advantage over the hand method of external heart massage in that it can control the amount of pressure

needed to attain the blood pressure desired for the patient.

In the case of Mr. Garrison, who is slowly improving in the hospital, the amount of pressure exerted was 70 pounds per square inch. A dial was set for this desired amount of pressure, and a green light flashed each time the indicated amount was applied to the bottom of the breastbone.

The inventor of the cardiactivator is W. J. Mullikin, a resident of Washington. Other inventions of his that have been successful are the Mullikin portable iron lung machine, developed in 1949, the wheel chair respirator and portable radio-operated traffic signals.

Mr. Mullikin told SCIENCE SERVICE he has been working on the cardiactivator for more than two years and had applied for a patent. He is particularly interested in production of a portable model weighing 22 pounds, which he hopes to introduce for ambulance use.

• Science News Letter, 80:150 September 2, 1961

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Measured Heart Damage

➤ A RELATIVELY simple and accurate test for heart damage using only a small sample of a patient's urine has been developed at the University of California, Los Angeles Medical School.

Drs. Robert B. and Richard W. Kalmansohn, brothers, developed the procedure which they call the urine glutamic oxalacetic transaminase (UGOT) test. The test may also measure the rate of repair of heart damage.

Glutamic oxalacetic transaminase (GOT) is an enzyme that apparently plays an important but not too well understood part in amino acid metabolism. It is particularly abundant in heart muscle.

During the acute heart muscle damage, called myocardial infarction, that follows a heart attack, the enzyme leaks out of damaged heart cells and appears in high concentration in the blood. Its activity is generally proportional to the amount of heart damage.

Several years ago the serum transaminase test, which measures GOT in blood serum, was developed. Since that time it has been used in diagnosis of myocardial infarction.

In recent years a number of researchers had attempted to develop a simpler transaminase procedure with urine. However, the fact that the activity of this enzyme rapidly disappeared on standing at room temperature presented a problem.

The Kalmansohn brothers found that if the urine sample were refrigerated immediately after it was taken, the GOT persisted for at least two days. Thus the sample would be suitable for GOT determination.

They ran UGOT tests on 17 consecutive patients with acute myocardial infarction proved by electrocardiogram and other conventional diagnostic procedures. These were compared with UGOT tests from 59 healthy control subjects.

GOT levels in the urine of the myocardial group were from two to five times higher than in the controls. It was also found that GOT levels started rising in urine eight hours after a heart attack, about the same as serum levels, but the urine levels may remain high longer than the serum levels.

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Live Vaccine Licensed

➤ THE LONG-AWAITED first licensing of the live oral poliovirus vaccine developed by Dr. Albert B. Sabin of Cincinnati, which was announced by the U. S. Public Health Service in Washington, D. C., marks another advance in the conquest of a disease that now has been reduced to a minor status.

As expected, Chas. Pfizer & Co., Inc., New York, will distribute vaccine exported to this country by Pfizer Ltd., its English company located in Kent County.

The vaccine is available free, if needed, at Government expense.

Only 900,000 doses have been contracted for (at nine cents a dose) and this vaccine

is effective only against Type I polio, the most common of the three types. Type III was found in Atlanta, Ga., recently, and Dr. Sabin provided enough of the Cincinnati batch of Type III vaccine to prevent an epidemic in the southern city. Other pharmaceutical companies expect to have all three types of oral vaccines ready by the 1962 polio season.

Dr. Luther L. Terry, Surgeon General of PHS, said he expected Type II vaccine to be licensed "in the near future" but that it would be several months at least before Type III would be ready for licensing.

Congress appropriated a million dollars last spring because President Kennedy requested that all three types of oral vaccine be purchased for the control of possible epidemics. With a part of these funds, the Type I vaccine is being purchased in frozen state to be held in reserve by the Communicable Disease Center in Atlanta.

State and Territorial health officers will answer local requests according to these requirements: At least three cases of polio in the community within a month must be reported, of which two have been confirmed by laboratory analysis to be Type I.

Adequate community organization and medical leadership must be guaranteed to insure rapid coverage of the population under 50 years of age. The community must agree to make the vaccine available without charge to persons under 50.

Only 363 polio cases have been reported for the first 31 weeks in 1961, compared to 948 cases for the same period in 1960.

Salk killed vaccine is recommended by the Public Health Service during the present season at least, as this vaccine will protect against all three types of polio.

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BIOLOGY

Change Proposed in Sex-Determination Ideas

➤ AN INDIAN YOUTH of 20 has doctors in a quandary because he is neither male nor female. His abnormality is a previously unknown form of intersex.

Doctors studying the case have proposed the idea that factors other than sex chromosomes strongly influence sex development in the unborn child. Their chief evidence is the youth, whose chromosomes are those of a normal female, but whose anatomy is both male and female.

With one possible exception, all previous cases of this type of abnormality have had male sex chromosomes in the body cells, and this factor was believed to be the difficulty.

The youth was reared as a male, the scientists report in the British Medical Journal, Aug. 19, 1961, and is "the first chromatin-positive individual in whom both gonads, on detailed sectioning, proved to be testes and whose sex chromosome constitution is apparently that of a normal female."

The study is reported by Dr. Prabhakar N. Shah, S. N. Naik, D. K. Mahajan, M. J. Dave and J. C. Paymaster, all of the Indian Cancer Research Center and Tata Memorial Hospital in Bombay.

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