

MEDICINE

Flu Vaccine for Civilians

Effective against Types A and B, the vaccine is like that used for the Army and should be available by Dec. 1. No signs of an epidemic this winter.

► INFLUENZA vaccine of the kind now being given to all Army personnel will be available for civilian use by Dec. 1 or shortly after.

The vaccine is effective against Types A and B influenza. These are the types which have caused epidemics in recent years. Other types of influenza virus exist. Authorities do not know whether the world-wide influenza epidemic in 1917-1918 was due to A or B virus or to some other type.

Army studies, prior to the general vaccination order, showed that about 75% of those vaccinated were protected against influenza during outbreaks which occurred soon after the vaccination. How long the immunity, or protection, lasts is not definitely known.

The vaccine is given by hypodermic injection under the skin of a single dose of one cubic centimeter (about one-fourth of a teaspoonful).

Civilians whose physicians advise them to be vaccinated will find that the vaccine is expensive. Actual manufacturing

costs are about 50 cents to one dollar per dose. Retail costs may be three to five times as much.

The vaccine is made from influenza virus grown on chick embryo. (See *SNL*, March 10). The following firms have been manufacturing the vaccine: Lederle, Squibb, Sharp and Dohme, Lilly, Pitman-Moore and Parke-Davis. Some manufacturers have already applied to the National Institute of Health for licenses to manufacture the vaccine for civilian use. Others will doubtless make similar requests soon and it is expected that firms which have not yet made the vaccine may do so in the future.

Influenza at present shows no signs of becoming epidemic this winter. Cases reported to the U. S. Public Health Service since Jan. 1 total about 85,000 compared to some 350,000 for the same period last year. Some widely scattered small outbreaks last spring led Army medical officers at that time to anticipate an epidemic this winter. Although it has not yet materialized, the possibility

at that time led to plans for vaccination of all personnel as soon as sufficient vaccine was available. By October there was enough of the vaccine to order general vaccination.

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PHYSICS

New Atomic Particle Being Investigated

► A NEW SORT of atomic particle or system consisting of a positron (positive electron) hooked to an electron is being investigated as the result of some thinking aloud about its possibilities that Prof. J. A. Wheeler of Princeton University has presented to the metropolitan section of the American Physical Society.

One of the most elusive and short-lived particles in the subatomic world is the meson, also called the mesotron, which is one of the results of cosmic rays rushing into the earth's atmosphere. These mesons, discovered in 1937, exist only for a millionth of a second or less.

The new particle, or whatever it is, that Prof. Wheeler suggests may exist, is as short-lived, and is considered to be a combination of the electron (which is the unit of negative electricity) and the positron (the positive electron discovered in 1932), holding cosmic hands with each other. In fact, this meson-like entity may be two positrons and two electrons, combinations of two of one and one of the other, or even three of each.

The new atomic baby, if it exists, has not yet been named and probably will not be until physicists are more sure that it exists, but it may be called "electromeson," "polyelectron" or "polytron."

Prof. Wheeler has suggested how a trap could be set for the new entity to determine whether it exists. It seems that when the positron and the electron come together annihilation occurs and two gamma rays are produced, rushing away at right angles to each other (polarized, as the physicists say). So if there are set up some counting devices that click when the X-ray-like energy of gamma rays comes along, and if two of them at right angles to each other click as one, then the physicists will feel rather sure that a "polytron," or what they want to call it, did exist a few minute fractions of a second earlier.

No use for the polytron is foreseen, if it really is. But then before the late war lots of people, now frantic about atomic bombs, would have seen no use for the fission of the uranium atom, if they had known or cared.

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GENERAL GET HIS—Maj. Gen. Norman T. Kirk, Surgeon General, U. S. Army, is getting his influenza vaccine shot. Left to right, Gen. Kirk, Lt. M. Ellen Evans, Maj. J. C. Strong. Photograph by Fremont Davis, Science Service staff photographer.