

UNITED STATES GOVERNMENT

Memorandum

TO : Field Staff, Smallpox Eradication Program

DATE: November 2, 1966

FROM : Chief, Smallpox Eradication Program

SUBJECT: Sterilization of Jet Injectors (For insertion on inside front cover of manual)

Sterilization of jet injection equipment can be accomplished by autoclaving at 121 degrees centigrade for 20 minutes. Boiling for 25 minutes has been employed, but this does not assure the killing of all spores. To assure sterilization by either of the above methods, reassembly of the jet injector in an aseptic manner is required. In field operation in West Africa reassembly in an aseptic manner, especially in dry dusty areas has proven difficult. Therefore studies were undertaken at the Communicable Disease Center to develop an acceptable method of cold sterilization applicable to field operations in West Africa. The following appears to be the simplest and most effective method for sterilization of the gun after disassembly:

1. Scrub disassembled parts with a scrub brush in a pan of soapy (bar soap) water. Flush with a 20 cc. syringe (adapted with 1/4 inch rubber tubing) the L-shaped tube which extends from the inlet valve to the vaccine chamber and also the needle.
2. Rinse parts in a second container of clean water.
3. Reassemble injector and prime with 2 percent tincture of iodine.
4. Fire three 0.5 cc. shots.
5. Fill chamber with tincture of iodine solution (gun in cocked position) and leave for 5 minutes.
6. Flush with 10 0.5 cc. shots of sterile water.

This process for sterilization was tested by contaminating four injector with dirt containing 20,000 aerobic and anaerobic organisms per gram (dirt treated so that spores were present). With this degree of contamination, no growth was obtained from any of the guns.

n.b.: With extensive contamination with dirt, further cleaning of ball valves, rings and seals was required to prevent particulate clogging of orifice.

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Memorandum

TO : Holders of the Manual

FROM : Chief, Smallpox Eradication Program

SUBJECT: Sterilization of Jet Injectors

DATE: May 31, 1967

Recent studies conducted by John Noble in the Vesicular Disease Laboratory, NCDC, demonstrate that the sterilization method advocated in the field staff memorandum of November 2, 1966 does not provide sufficient flushing to prevent a deleterious effect of residual iodine on measles vaccine potency.

A summary of the results were forwarded to each field post. These data indicate that sufficient residual iodine remains after the recommended flush procedure to deleteriously affect at least the first five doses of measles vaccine administered after the iodine sterilization procedure. The 20th dose following the procedure was found to be without evidence of residual iodine effect.

In view of this, the following amendment should be made to the memorandum of November 2.

Under point 6 - "Flush with 10 0.5 cc. shots of sterile water" should be changed to read "Flush with 30 0.5 cc. shots of sterile water."

This change is interim until additional studies in the laboratory have defined the minimum number of flush doses required to assure an absence of residual iodine effect.

Consonant with this change in sterilization practice should be a re-emphasis of the desirability of using heat sterilization techniques where these can be done practicably in the field.

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