

Low Workload Jet Injector for Routine Immunizations

CLIENT: Centers for Disease Control and Prevention, Atlanta, Georgia
(Contract #200-98-0419; October 1998 – March 1999)

OBJECTIVE:

Routine Immunization Clinics around the world deliver vaccines to children using needles and syringes: a simple, effective, and inexpensive method for parenteral delivery of drugs and vaccines. However, because of improper sterilization and possible reuse of the needle and syringe, the danger of transmission of blood-borne disease is very high, especially in resource-poor settings.

In an attempt to eliminate the problems associated with needles and syringes, multi-use nozzle jet injectors, were once used for immunizations until they were found to transmit blood borne pathogens between patients. Their use was stopped, and the world was left with no alternative to needles for immunization.



The objective of this contract was to develop a new, safer, needle-free jet injector suitable for use in routine immunization clinics in both developed and developing countries.

SOLUTION:

DCI designed a manually armed needle-free jet injection system that uses auto-disabling single shot disposable cartridges to eliminate the possibility of both pre-injection contamination and post-injection cross-infection. The system is quickly and easily manually prepared for the next injection, which allows for use anywhere in the world regardless of available power supplies.

RESULTS:

DCI designed and fabricated a prototype model, which has been used for animal testing. Fabrication of a next phase manual prototype is currently in process.