

SoloShot

Health need

Although sterile, disposable syringes and needles offer the best protection against transmission of bloodborne diseases, they are often reused in the developing world. Each year, more than 12 billion injections are administered worldwide; in the past in developing countries 50 percent of injections were estimated to be unsafe. A primary source of transmission of disease has been the reuse of contaminated needles and syringes. To be completely safe, single-use injection devices must be designed to automatically and irrevocably inactivate after a single cycle of filling and injection. The World Health Organization/Expanded Programme on Immunization (WHO/EPI) called for the design of such devices in 1987.

Technology solution

In response to WHO's call, PATH designed one of the first feasible approaches to nonreusable syringes for immunizations: an autodisable (AD) syringe with a fixed needle that automatically locks after a single injection. When the syringe is filled to the preset 0.5-ml level, the plunger stops and cannot be pulled back further. After the vaccine is injected, the plunger automatically locks so that the syringe and needle cannot be reused. Known as the SoloShot syringe, this technology was licensed to and is now manufactured and marketed by BD, one of the world's leading syringe manufacturers. Third-party field validations of the device in Pakistan in the early 1990s demonstrated the acceptability and usability of the design. PATH also has assisted several other manufacturers of AD syringes to ensure a wide variety of products are available and to facilitate the lower pricing that accompanies increased competition and production volume.

Current status and results

Since commercial introduction in 1992, 6 billion vaccinations have been delivered using SoloShot syringes by public health programs in more than 40 developing and emerging countries. United Nations Children's Fund—which has already distributed hundreds of millions of AD syringes to EPI programs—now provides only AD syringes to countries requesting disposable syringes, many of which are SoloShot syringes. BD continues to supply the syringes to national and international public health agencies at low cost. In fact, the syringe was one used in the recent PATH- and WHO-sponsored meningitis vaccine campaign in West Africa where millions of people were immunized. The price of AD syringes is dropping rapidly and is currently within two cents of the price of disposable syringes. PATH is also assisting USAID-supported family planning agencies with the introduction of a 1-ml AD syringe to be bundled with injectable contraceptives.

AD syringes are now routinely used in immunization programs throughout the world. They can be used safely by vaccinators regardless of past experience or training. The devices are quicker to use than a conventional syringe and are preferred over a conventional syringe by vaccinators due to the speed and ease with which a correct vaccine dose can be drawn.

SoloShot is a trademark of BD.



An autodisable, single-use syringe.

“The autodisable syringe, which is now widely available at low cost, presents the lowest risk of person-to-person transmission of bloodborne pathogens.”

WHO-UNICEF-UNFPA Joint Statement, 2003.

Availability

This technology has been licensed and is available from BD Pharmaceutical Systems, New Jersey, USA, Michael Garrison michael_garrison@bd.com.

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