

SoloShot™

Health need

Although sterile, disposable syringes and needles are an effective means for delivering vaccines and essential medicines that protect against bloodborne diseases, they are often reused in the developing world. Each year, more than 12 billion injections are administered worldwide, and it is estimated that 40 percent of these are administered with reused, unsterilized injection equipment—a primary source of disease transmission.¹ To be completely safe, single-use injection devices must be designed to automatically and irrevocably inactivate after a single cycle of filling and injection.

Technology solution

In 1987, the World Health Organization (WHO) Expanded Programme on Immunization (EPI) called for the design of safer injection devices. In response, 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 its preset level, the plunger stops and cannot be retracted 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

AD syringes are now routinely used throughout the world, particularly for immunizations. 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. In addition, the price of AD syringes continues to drop. It is currently within two cents of the price of disposable syringes.

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. Every year, the United Nations Children's Fund (UNICEF) distributes hundreds of millions of AD syringes to EPI programs. To countries requesting disposable syringes, UNICEF now provides only AD syringes, many of which are SoloShot syringes.

SoloShot syringes were used in the recent PATH- and WHO-sponsored meningitis vaccine campaign in West Africa, helping to immunize millions of people. We have also assisted USAID-supported family planning agencies with the introduction of a 1-ml AD syringe bundled with injectable contraceptives.

1. Page on injection safety. World Health Organization website. Available at: <http://www.who.int/mediacentre/factsheets/fs231/en/>. Accessed August 14, 2013.

SoloShot is a trademark of BD.



PATH/Glenn Austin

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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