Prefilled auto-disable injection system

Country of origin | United States of America

Health problem addressed

Solutions are needed in low-resource settings to increase access to drug and vaccine delivery. It is also necessary to prevent reuse of syringes, helping to prevent transmission of bloodborne disease and to minimize waste in these settings.

Product description

The device developed to address this health problem is a compact, sterile, prefilled, nonreusable injection system for delivery of vaccines or drugs.

Product functionality

The prefilled, sterile injection system may allow minimally trained health workers to accurately inject drugs or vaccines that they would not otherwise be allowed to deliver. The auto-disable feature prevents reuse, helping prevent transmission of bloodborne disease between patients. The compact, prefill device also minimizes waste.

Developer's claims of product benefits

Compared with standard syringes and ampoules (depending on the drug delivered), the developed injection system is prefilled ensuring an accurate dose by minimally skilled health workers. It is individually packaged and sterile in an injection-ready format, optimal for low-resource settings. It is compact and prefilled so generates minimal waste.

Operating steps

1. Open the foil pouch; 2. Push the needle shield into the port; 3. Push until you close the gap between needle shield and port; 4. Remove the needle shield; 5. Hold the device by the port and insert needle into patient; 6. Squeeze reservoir firmly to inject; Discard according to medical waste procedures.

Development stage

The injection system was developed around 15 years ago, and as a viable container for drugs is fully developed. The availability of important drugs in the injection device for use in low-resource settings is established in some areas and developing in others. Oxytocin, hepatitis B vaccine, and tetanus Toxoid vaccine are available in some countries; other drugs and vaccines are in early stage development. Injectable contraceptives are in their final stage of regulatory approval. Betamethasone and gentamicin are still in research stages.

The unfilled device is available for purchase by pharmaceutical manufacturers worldwide.

Future work and challenges

The injection system itself is designed to be portable and requires minimal resources for preparation. Depending on the drug or vaccine applied, cold chain may be needed. Some applications can include a time-temperature indicator which allows brief excursions out of the cold chain, like to low-resource health posts or for rural/home delivery.

User and environment

User: Patient, family member, nurse, midwife, physician

Training: User instructions are included in the box and on the primary packaging.

Environment of use

Setting: At home and in health care facilities in rural and urban settings.

Requirements: The device itself is designed to be portable and requires minimal resources for preparation. Depending on the drug or vaccine applied, cold chain may be needed.

Product specifications

Dimensions (mm): max.100 (excl. pouch) x 23 x 10 (reservoir height)

Weight (kg): 0.002 - 0.0025 (filled, excluding pouch)

Shelf life: 5 years

Retail Price (USD): Varies by drug/vaccine and country

Other features: Portable and single-use.

Year of commercialization: 1998

Currently sold in: Indonesia, India, Argentina, Belgium

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