

Demonstrating needle remover use to improve sharps waste management in Vietnam

Each year, more than 16 billion injections are administered worldwide. The World Health Organization (WHO) estimates more than 50 percent of injections given in developing countries are unsafe. Safe injections are administered using the appropriate equipment and do not harm the recipient, expose the provider to any preventable risks, or result in waste that is dangerous for the community.

Safer waste management in Vietnam

WHO recommends using autodisable syringes to decrease the risk of infections from reuse of syringes. Building on this recommendation, the Vietnamese government began focusing on injection safety, and in 2003 introduced autodisable syringes at all levels of the nation's health system. Although the use of these syringes created safer conditions, single use syringes created more medical waste.

A 2003 review by the National Expanded Program on Immunization (NEPI) found waste management procedures at the commune level needed improvement. The review noted collection systems such as safety boxes were not always available and—if available—often used incorrectly. Although sharps waste was often destroyed or incinerated, survey teams discovered used

syringes and needles in public areas as well as the use of several unsafe disposal methods.

The potential impact of needle remover use

In 2005, PATH and NEPI implemented a six-month demonstration project in Ha Tinh Province to assess the acceptability, performance, and impact of a manual needle remover device at commune health centers (CHCs). Needle removers separate the hub and needle from the body of the syringe to isolate the contaminated sharp and disable the syringe. Needle removers can reduce the risk of potential infection to patients, health care workers, waste handlers, and the community through safer waste-disposal systems.

The results of this demonstration project are enabling NEPI to explore alternative methods for managing medical waste at the commune level.

Methodology

The needle remover demonstration project involved 124 CHC officials and injection providers from 23 communes of Huong Khe district. CHCs were divided into one of three groups using different methods to manage syringe and needle disposal. Group 1 CHCs received adequate supplies of needle removers (Nomoresharps® devices)¹. Groups 1 and 2 received



Health workers reported that needle removers were easy to operate, clean, safe, and effective for treating contaminated syringes at the health centers and in the community.

¹ Nomoresharps is a registered trademark of BMDi.

safety boxes as well as training in safe injection practices, using needle removers, needle pits, and safety boxes. Group 3 received injection safety training at the end of the project. Throughout the study, PATH provided regular monitoring visits.

Researchers conducted evaluations before, during, and after the demonstration project to document CHC use of needle removers and safety boxes, safe injection practices, sharps waste disposal practices, and the prevalence of needlestick injuries. The project team collected data using daily logs recorded by injection providers, monthly monitoring visits, in-depth interviews, focus group discussions at the end of the study, and a CHC staff survey before and after the project.

Improving medical waste disposal

A baseline survey was conducted in 12 of 23 project facilities to document existing sharps waste disposal practices. The survey found several unsafe waste disposal practices: incorrect use of safety boxes; improperly discarded syringes and needles in regular trash bins, treatment rooms, open garbage pits, and public locations; and used needles and syringes sold for recycling.

After six months, a significant improvement in medical waste disposal practices occurred in participating CHCs. Groups 1 and 2—those using needle removers, needle pits, and safety boxes—showed significant improvement in safe injection and waste disposal resulting in safer CHC work environments. Prior to the study, 50 percent of CHCs reported separating syringes and needles

from solid waste. After the evaluation, 100 percent of Group 1 and 80 percent of Group 2 CHCs separated syringes and needles from waste.

Group 3 also demonstrated improvement in medical waste disposal practices such as separating sharps waste. This change was attributed to increased supervision and information sharing among health workers from Group 1 and 2 facilities.

Acceptability and performance

Twenty-eight health workers provided feedback through in-depth interviews. Twenty-four interviewees assessed the needle remover function as good or very good and 4 classified it as average. Health workers noted that needle removers were easy to operate and clean, and safe and effective for managing contaminated syringes. Results of in-depth interviews and focus group discussions also showed that needle remover use became routine for CHCs using the device.

After six months, 23 of 28 needle removers remained in good working condition. Due to irregular maintenance, three needle removers jammed or rusted during the study. Health workers also noted the incompatibility of certain syringes with the needle remover.



Recommendations and next steps

Training and maintenance remain critical issues for ensuring the successful introduction and use of needle removers. Strengthening supervision at the CHCs is important if needle removers are broadly introduced in the future. Before introducing needle remover devices or other new technologies, it is necessary to ensure compatibility with syringes used in Vietnam.

Safety boxes continue to be an important tool for managing sharps waste in Vietnam. However, unreliable supplies and lack of permanent disposal options present challenges for Vietnam's health centers.

Needle removers provide an opportunity for significant improvement in the management of medical waste at CHCs. They have been evaluated as a feasible solution, accepted by most health workers and managers, and capable of addressing problems of health care waste disposal. Based on the results of this demonstration project, the evaluation team recommends broader introduction of needle removers in CHCs.

Since this study, the use of needle removers was recommended in draft health care waste management guidelines as another option for sharps waste management in Vietnam CHCs.

More information

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