

# Injection Safety in Nepal

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## 1. Introduction

Syringes are widely used in health services for immunization, medical treatment and family planning. Each year at least 16 billion injections are administered in developing and transitional countries. The vast majority, around 95%, are given in curative care. (1) A safe injection, phlebotomy, lancet procedure or intravenous device insertion does not harm the recipient, does not expose the provider to any avoidable risk and does not result in any waste that is dangerous for other people. (1) In order not to harm the patient, each procedure should be administered with a new sterile single-use device, using the right medication, vaccine or fluid or infusion. In order not to expose the provider to any avoidable risk, needles used during a procedure should be placed in a puncture-proof closed container immediately after use without recapping. To ensure that any waste produced during a procedure does not become a hazard for other people, used sharps waste and infectious non-sharp waste should be safely managed. The final disposal of sharps containers and other medical waste should be conducted according to local and international health and environmental standards.

## 2. Estimation of syringes used in Nepal

The estimation of quantity of syringes used in Nepal is difficult because of lack of such researches in the past. Two studies conducted in Nepal showed that about 83% of inpatient and about 3% of outpatient encountered with at least one injection. (4,5) According to annual report published by government of Nepal in 2009/10, there were 3,86,381 and 48,79,714 inpatient and outpatient respectively. By using the above percentage, the single dose of syringes used would be 4,55,495. By assuming on an average, one patient got 5 injections, the total number of syringes used per year will be 22,77,475. This estimation does not include private sectors and medical colleges which were not reporting to the health management information system.

## 3. Major Problems

### *i. Needle stick injuries*

According to the essential drugs list of Nepal, about 37% of drugs are injectable. (2) A study conducted in Nepal showed injections encountered among OPD patients were 3.1% (3) and 2.25%. (4) Another similar

study from Nepal showed that 82.94% of inpatients received one or more injection/s during their hospital stay. (5) According to a study conducted in western region of Nepal, 70% of clinical staff and 63% of non-clinical staff had experienced a needle stick injury or other sharps injury at some time. The leading cause of needle stick injury for doctors, nurses and paramedics was medicating patients (26% of injuries), followed by recapping needles (25%) and inserting IV lines (21%). (6)

### *ii. Use/Reuse of unsterilized syringes*

Syringe reuse without sterilization and their subsequent over use is also an important public health concern in Nepal. Up to 70% of injections are given with reused syringes and needles in the developing world. The data showed that 30% of new Hepatitis B infection, 41% of new Hepatitis C infection and 5% of new HIV/AIDs are due to reuse of syringes. (7) Reuse of syringes or needles is common in South Asia and is a widespread practice in Nepal. Haphazardly discarded syringes, which are collected by rag pickers, are found in the market where they are washed and sold. (8) A study in western Nepal found that use of previously used needle/syringes among IDUs users was 21%. (9)

### *iii. Poor management of used syringes*

Health care waste management poses a serious challenge in Nepal. It is estimated that Nepal generates some 365 tons of health care waste annually. (10) Surveys and research done at different points in time in various healthcare facilities by different organizations and individuals show that the quantity of infectious healthcare waste varies from 0.1 to 0.48 kg/bed/day. (11) A study conducted in a hospital in Nepal concluded that the waste management system was poor. The segregation, collection, transportation, storage and disposal practice of the hospital waste was found to be unsatisfactory. (10) The management of syringes is a major problem in peripheral level health care facilities and almost every provider interviewed reported lack or insufficient supply of kerosene though incineration is recommended means of hospital waste management. This problem seriously compromises the safety and effectiveness of hospital waste management in Nepal. (12)

## 4. Conclusion

The scientific evidences in relation to injection practices in Nepal are inadequate. Based on the limited literatures available on this field, we can conclude that unsafe injection practice is a major public health problem in Nepal and an effective intervention focusing on major risk group is necessary. However, more rigorous and robust researches are needed to fulfill the existing gap on scientific evidences. It is also very important to explore on the unnecessary prescription of syringes in future days.

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