INJECTION PRACTICES:
RAPID ASSESSMENT AND RESPONSE GUIDE

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World Health Organization
Service Delivery and Safety Department
Health Systems and Innovation
Acknowledgement

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### Improvements in Injection Practices: Measurements and Indicators

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<tr>
<th>Programme Indicators</th>
<th>Indicator</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis prevention programme communicating the risk of hepatitis infection</td>
<td>Yes/No</td>
<td>MOH/Hepatitis surveillance</td>
</tr>
<tr>
<td>associated with unsafe injections</td>
<td></td>
<td>data</td>
</tr>
<tr>
<td>HIV/AIDS prevention and control programme communicating the risk of HIV</td>
<td>Yes/No</td>
<td>MOH/HIV programme data</td>
</tr>
<tr>
<td>infection associated with unsafe injections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reuse prevention injection devices promoted as a policy</td>
<td>Yes/No</td>
<td>MOH</td>
</tr>
<tr>
<td>National drug policy discouraging injection overuse</td>
<td>Yes/No</td>
<td>MOH</td>
</tr>
<tr>
<td>Number of injectable medicines on the national essential drug list</td>
<td></td>
<td>MOH</td>
</tr>
<tr>
<td>Essential drug programmes supplying syringes, needles, diluents and safety boxes</td>
<td>Yes/No</td>
<td>MOH</td>
</tr>
<tr>
<td>in quantities matching supplies of injectable medications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunization and family planning services supplying auto disable syringes and needles</td>
<td>Yes/No</td>
<td>MOH</td>
</tr>
<tr>
<td>in quantities matching supplies of injectable vaccines and contraceptives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health-care and sharps management plan within the health system</td>
<td>Yes/No</td>
<td>MOH</td>
</tr>
</tbody>
</table>

### Determinants of Injection Practices

<table>
<thead>
<tr>
<th>Determinants of Injection Practices</th>
<th>Indicator</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injection Use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of the population</td>
<td></td>
<td>Population survey</td>
</tr>
<tr>
<td>reporting a preference for injection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>in the case of fever</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average number of injections</td>
<td></td>
<td>Population survey</td>
</tr>
<tr>
<td>per person per year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of prescribers</td>
<td></td>
<td>Prescriber survey</td>
</tr>
<tr>
<td>reporting a preference for injections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>among patients in the case of fever</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of population</td>
<td></td>
<td>Population survey</td>
</tr>
<tr>
<td>recalling that the last injection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>received has been given with a new</td>
<td></td>
<td></td>
</tr>
<tr>
<td>syringe opened from a new packet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of population recognizing</td>
<td></td>
<td>Population survey</td>
</tr>
<tr>
<td>that the last injection given</td>
<td></td>
<td></td>
</tr>
<tr>
<td>was with a reuse prevention syringe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Injection Safety</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of population</td>
<td></td>
<td>Population survey</td>
</tr>
<tr>
<td>spontaneously reporting the risk of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hepatitis infection with unsafe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>injections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of population</td>
<td></td>
<td>Population survey</td>
</tr>
<tr>
<td>spontaneously reporting the risk of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hepatitis infection with unsafe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>injections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of prescribers</td>
<td></td>
<td>Prescribers survey</td>
</tr>
<tr>
<td>spontaneously associating the risk of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hepatitis C with unsafe injections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of health facilities</td>
<td></td>
<td>Providers survey</td>
</tr>
<tr>
<td>using single use syringes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of health facilities</td>
<td></td>
<td>Providers survey</td>
</tr>
<tr>
<td>using reuse prevention syringes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of health facilities</td>
<td></td>
<td>Providers survey</td>
</tr>
<tr>
<td>with stocks of single use injection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of injections</td>
<td></td>
<td>Providers survey</td>
</tr>
<tr>
<td>administered by information/untrained</td>
<td></td>
<td></td>
</tr>
<tr>
<td>providers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Injection Practices

<table>
<thead>
<tr>
<th>Injection Practices</th>
<th>Indicator</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescription of Injections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of prescription including</td>
<td></td>
<td>Prescriptions</td>
</tr>
<tr>
<td>at least one injection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average number of injection per</td>
<td></td>
<td>Prescriptions</td>
</tr>
<tr>
<td>prescription</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Injection Safety</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of health facilities</td>
<td></td>
<td>Providers survey</td>
</tr>
<tr>
<td>where injections given with a sterile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>syringe and needle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of health facilities</td>
<td></td>
<td>Providers survey</td>
</tr>
<tr>
<td>where injections given with reuse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>prevention/sharp injury prevention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>devices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of health facilities</td>
<td></td>
<td>Providers survey</td>
</tr>
<tr>
<td>where used injection equipment can</td>
<td></td>
<td></td>
</tr>
<tr>
<td>be observed placing the patients at</td>
<td></td>
<td></td>
</tr>
<tr>
<td>risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of health facilities</td>
<td></td>
<td>Providers survey</td>
</tr>
<tr>
<td>where used injection equipment can</td>
<td></td>
<td></td>
</tr>
<tr>
<td>be observed placing the providers at</td>
<td></td>
<td></td>
</tr>
<tr>
<td>risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of health facilities where sharps are handled unsafely</td>
<td>____%</td>
<td>Providers survey</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>-------</td>
<td>------------------</td>
</tr>
<tr>
<td>Proportion of health facilities where sharps can be seen in the surrounding areas of the facility</td>
<td>____%</td>
<td>Providers survey</td>
</tr>
</tbody>
</table>
Overview of the problem

Injections are one of the most common medical procedure in health-care. They play a key role in saving lives especially in acute conditions, prevention of diseases and otherwise. It is estimated that 16 billion injections are given each year worldwide out which 90-95% are for therapeutic purpose while 5-10% are immunization and other injections.

The problem of unsafe injection practices is a global one affecting patients, communities and health-care workers. Injections are unnecessarily prescribed in conditions when oral alternatives are available for common ailments. Injection equipment is reused more than once, increasing the possibility of transmitting infection to the patient. Unsafe handling of injection equipment can also be dangerous for the health-care worker and waste handler. Most common unsafe injection practices include:

1. Unnecessary prescription of injections
2. Reuse of injection equipment
3. Needlestick injuries to health-care workers
4. Unsafe handling of sharps

Unsafe injections worldwide\(^1,2\)

- Out of 6.6 billion injections (39.6%) were given with reused equipment (up to 70% in some countries)
- Over 70% of injections were unnecessary in some regions
- Unsafe injection practices, annually caused:
  - 21 million hepatitis B infections (30% of new cases)
  - 2 million hepatitis C infections (41% of new cases)
  - 260 000 HIV/AIDS infections (9% of new cases)
- 3 million accidental needle-stick injuries (2003) leading to:
  - 37% of all new HBV cases in HCWs
  - 39% of new HCV cases
  - 5.5% of new HIV cases
- Every year unsafe injections cause 1.3 million early deaths, a loss of 26 million years of life, and direct medical costs of 535 million US dollars

Progress made by WHO

Since 2000 WHO has contributed significantly globally to address the problem of unsafe injections. These efforts have been supported by the Safe Injection Global Network (SIGN) alliance and other international stakeholders. A review in 2010 indicated that proportion of reuse of injection devices dropped from 39.8% to 5.5% although some regions still remain

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\(^1\) Hutin YJ, Hauri AM, Armstrong GL. Use of injections in healthcare setting worldwide, 2000: literature review and regional estimates. BMJ. 2003 Nov 8;327(7423):1075.

Another study from 2010 reported that there was 87% and 83% reduction in transmission of hepatitis B and C respectively due to unsafe injections.\(^3\)

**WHO 2015 guidelines for injection safety**


Auto disable syringes (AD) are already in use in the immunization services globally. Their introduction along with matching supply of safety boxes, training and supervision addressed the problem of reuse of injections in the EPI programme.

Reuse prevention and needle-stick injury protection syringes, especially in curative services, are the focus of WHO recommendations, along with provision of sharps waste management equipment. As part of a comprehensive package of interventions to ensure safe and rational use of injections-including communication and behaviour change strategies, supportive policies and provision of sufficient quantities of the appropriate injection equipment—WHO has analysed the potential contribution of safety-engineered syringes in reducing the problem of reuse and preventing needle-stick injuries.

Safety syringes are well-established and available in global markets. Official performance requirements and definitions have been added and developed over time, beginning with auto-disable syringes for immunization in 1990 and progressing to models with reuse prevention in 2006 and needle-stick protection features in 2012. The International Organization for Standardization (ISO) has well-defined requirements for producers of these products related to performance and fitness for purpose of safety syringes.

*Note: Syringes engineered to prevent reuse are not suitable for certain medical procedures e.g. when administering multiple medicines, maintenance of IV lines, local anaesthesia and nasal feeding. Conventional disposable syringes should be used safely in these and similar instances.*

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Ensuring injection safety
Injection safety is a multi prong approach which has five key components:

1. An Injection Safety Policy
2. A Behaviour Change Strategy
3. Equipment and Supplies Availability
4. Sharps Management System
5. Monitoring Impact

Purpose of this guide
This guide is not meant to be used for one person conducting an assessment to generate data. It is part of a framework of approach for stakeholders and partners who want to examine injection practices, their determinants and ultimate consequences so that an action plan can be formulated. More than one type of users can use different portions of this guide.

Assessment of injection practices at national or regional level
Anthropologists, epidemiologists and public health professionals wanting to conduct comprehensive or specific assessment of injection practices are the primary audience of this guide.

International experts
Internal experts and consultants for WHO or other organizations will find this useful when asked to assess or evaluate injection practices in countries where unsafe injections are a problem or prevention efforts are planned to solve the problem.

Policy makers and senior management personnel
Policy makers should refer to the WHO 2015 guidelines easily downloadable from http://www.who.int/injection_safety/global-campaign/injection-safety_guideline.pdf?ua=1
Step 1: Engaging stakeholders

Injection safety does not require a separate programme. The best results can be achieved by integrating it as part of overall health improvement efforts. The key stakeholders for injection safety should be:

1. Hepatitis programme
2. HIV/AIDS programme
3. Essential drugs
4. Immunization/EPI
5. Family planning
6. Other services

Stakeholders working with regulatory authorities may be approached such as professional associations, UN agencies (WHO, UNICEF and UNAIDS), the World Bank and non governmental organizations (NGOs).

Table 1: Key programmes of Ministry of Health that can be engaged in injection safety and their role

<table>
<thead>
<tr>
<th>Key programme areas</th>
<th>Role in injection safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis prevention</td>
<td>Communicating the risk of unsafe injections and hepatitis to patients and health-care workers</td>
</tr>
<tr>
<td>HIV/AIDS control programmes</td>
<td>Communicating the risk of unsafe injections and HIV to patients and health-care workers</td>
</tr>
<tr>
<td>Essential drugs</td>
<td>Ensuring availability of reuse prevention and other injection equipment, diluent and safety boxes Promoting rational use of injections</td>
</tr>
<tr>
<td>Immunization and family planning services</td>
<td>Ensuring availability of auto disable syringes and safety boxes along with vaccine and injectable contraceptives</td>
</tr>
<tr>
<td>Health-care services</td>
<td>Management of sharps waste</td>
</tr>
</tbody>
</table>

Helping understand the results of rapid assessment

In order to understand stakeholders’ perception regarding injection practices it is important to interview them. This will help in better communicating the actual results of rapid assessment.

In order to gain ownership stakeholders should be engaged in the preparation and sampling of the assessment. They may even want to participate in the data collection and analysis. They must however be engaged in the development of recommendations.
Step 2: Describing local situation

Key informants can help in gathering information about local situation. They can also identify population or health facilities surveys which are at planning stage and can be used to collect information about injection practices.

While published literature is available online at different resources, two places to look first are:


Sources of data on injection safety

DHS

Besides published and unpublished research reports other information sources regarding both the frequency and safety of injections may be available from population based surveys e.g. Demographic Health Survey (DHS). DHS collects information that may be useful for example in case of illness among children in the last two weeks including health care seeking behaviour and use of injections to treat diarrhoea if applicable:

Some countries collect additional information regarding:

- Behaviours that place individuals at increased risk of HIV infection, including the number of injections received in the last three months and the person who administered the last injection received;
- Malaria, including health-care seeking behaviour during the last episode of malaria and medication used for treatment (without a specific reference to injections);
- Health expenditures, which may include information on health-care seeking behaviours.

Other sources of data on injection safety

- Injection safety assessment using WHO Tool “C”
- EPI injection safety reviews
- GAVI assessments
- Other health-care facility surveys
Step 3: Develop assessment plans

Reviewing the available information will determine need of information in the areas of:

- Determinants of good and poor injection practices;
- Injection practices including overuse of injections and proportion of unsafe injections among injection providers;
- The consequences of poor practices among patients.

Rapid assessment requires collecting information from following recipients:

1. Prescribers (trained and untrained), using interview and reviews of prescriptions;
2. Injection providers (nurses or others) administering injections, using interview and observations in the health facility;
3. Patients (community) using interviews.

Timeline for data collection

Table 2 describes a timeline of three weeks for one team to collect data from 20 health facilities distributed across four districts. Other timelines may be developed according to the proposed sample size, human resource available and size of the area to be covered.

Table 2: Scope of work for a three week data collection of injection practices using a convenient sampling in four districts

<table>
<thead>
<tr>
<th>Day</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Weekend</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 1</strong></td>
<td>Meeting stakeholders</td>
<td>Meeting stakeholders</td>
<td>Travel to site 1</td>
<td>Field work site 1</td>
<td>Field work site 1</td>
<td>Travel to site 2</td>
</tr>
<tr>
<td><strong>Week 2</strong></td>
<td>Field work site 2</td>
<td>Field work site 2</td>
<td>Travel to site 3</td>
<td>Field work site 3</td>
<td>Field work site 3</td>
<td>Travel to site 4</td>
</tr>
<tr>
<td><strong>Week 3</strong></td>
<td>Field work site 4</td>
<td>Field work site 4</td>
<td>Travel back</td>
<td>Preliminary analysis</td>
<td>Debriefing</td>
<td>Any other left over task</td>
</tr>
</tbody>
</table>
Step 4: Gather evidence

Objective of data collection
The objective of data collection is to gather information regarding a set of indicators reflecting injection practices, their determinants and their consequences in a way that will make the results generalizable at a larger context.

Information sources
The participants of rapid assessment will be:

1. Prescribers
2. Providers
3. Patients (communities)

Methodology
Health-care facilities will be used to identify prescribers, injection providers and patients. The sampling strategy will be a two step approach:

1. Sampling of primary health-care facilities from the list of primary care facilities; effort should be made to include private facilities as well as the problem of unsafe injection in some regions is more prominent among private prescribers;
2. Selection of prescribers, providers and patients on the basis of samples health facilities.

Sampling options
Depending on the quality of data required a number of options may be chosen from. It has to be sorted out as to who the primary users of information will be. Stakeholders need to be engaged in this process to finalize the quality of data required and the resources needed for data collection.

Data quality, feasibility and costs
Studies can be conducted perfectly but there is also a cost. Advance planning may allow the rapid assessment to be conducted at a low cost if it can be integrated with other surveys. In case that is not possible stakeholders must decide the price they can pay for the quality of data they want to make their decisions.

Option 1a: Statistically representative samples
WHO Tool “C” proposes a two stage cluster sampling method to obtain a representative sample of health-care facilities. In such a cluster sampling, self weighting is ensured through 1) choice of regions in which clusters are selected using probability proportional to population size and 2) equal numbers of sampling units within each cluster. In the cluster sampling approach 10 facilities are selected in each of eight clusters. First eight districts are selected using a probability proportional to their population sizes. Second, within each of the eight districts 10 facilities are selected at random from the list of primary health-care facilities. This cluster

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sample design provides +/- 10% precision around the estimate and may be adapted to large countries as it factors in travel to a small number of districts.

**Option 1b: Random sample of 20 primary health centres**

Another option could be using a random sample approach, 20 health facilities which can be selected from a list of primary health centres. Random sampling may be more adjustable in some settings. The sample size of 20 will provide less precision than option 1a.

**Option 2: Convenience sample of health facilities**

If it is not possible to conduct the assessment using a statistically representative sampling approach, a convenient sampling approach may be used. The investigator will have to determine how best she/he can maintain representativeness in selecting the 20 health facilities. The number has to be acceptable by stakeholders who will use the results of the assessment. The number 20 is minimum and if necessary it can be increased depending on resources and logistical support.

**Selecting districts for convenient sampling**

In conditions when resources are limited and the rapid assessment has to be carried out in four districts the selection can be:

1. Capital city as the first district
2. Two semi rural/peri urban districts
3. One remote rural district where the situation is perceived to be bad in terms of injection safety
4. Five health facilities per district can be selected for the rapid assessment

**Selecting prescriber, providers and patients (community)**

**Selecting prescribers**

In each health facility one or more prescribers should be recruited at random. Each prescriber’s 30 prescriptions should be reviewed after random selection.

**Selecting providers**

One or more provider at each facility can be selected randomly.

**Selecting patients (community members)**

Select a pre set number of persons using the health facility. They can be recruited using any of the following approach:

1. Exit interview as the patient is leaving the health facility. They don’t necessarily have to be the same i.e patients from the same facility but it will be useful to recruit the ones from a health facility that was assessed.
2. Sampling from a list of households available in the villages or communities from the catchment area.
3. Field randomization method: spinning a bottle and starting from the direction it stops spinning.
4. Selecting a convenient sample of the population available in the market of the village where the facility is located.
5. Maintaining a gender and age balance is recommended to achieve representativeness.

Sample size
In order to maintain optimization sample size may be calculated according to desired precision and other constraints. At minimum the final sample should constitute of:

1. 20 prescribers
2. 20 providers
3. 100 patients/community members
4. 600 prescriptions
Step 5: Develop conclusions
Collaborating with key stakeholders in analysing data and developing conclusions will be most helpful in making use of the evidence from the assessment.

Quantitative analysis of data
Reviewing the prescription to determine injection use can be calculated by a relatively simple method:

Prescription with one injection/Total number of prescriptions X 100

E.g. 389/613 X 100 = 63.4% prescriptions contained injections

Other indicators
- Average number of injections per prescription containing at least one injectable medication.
- Proportion of prescribers reporting patient’s preference for injection in case of minor ailments.
- Proportion of prescribers spontaneously reporting the risk of infection with HBV, HCV and HIV associated with unsafe injections.

Indicators to be used from data collected from providers
- The proportion of health facilities where injections are observed to be given with a sterile syringe and needle.
- Proportion of health facilities where injections are observed given with reuse prevention devices.
- Proportion of health facilities where reuse of injection equipment can be observed
- Proportion of health facilities where health-care workers are exposed to needlestick injuries.
- Annual number of needlestick injuries reported by providers.
- Proportion of health facilities where used injection equipment is visible in the surrounding environment.
- Ratio of therapeutic to immunization injections.
- Proportion of providers reporting the risk of infection with HBV, HCV and HIV associated with unsafe injections.
- The proportion health facilities using sterilizable injection equipment.
- The proportion of health facilities using single use injection equipment.
- The proportion of health facilities using reuse prevention devices.
- The proportion of health facilities using AD syringes for immunization injections.
- The proportion of health facilities with stock of injection equipment at the time of the visit.
- The proportion of providers reporting sufficient supplies of sharps containers.

Indicators for data from patient/communities
- The proportion of patients reported a preference for injections for treatment of minor ailments.
- Proportion of patients/communities reporting risk of infection with HIV, HBV and HCV linked with unsafe injections.
• The average number of injections per person per year.
• Proportion of patients recalling that their last injection was given by an untrained prescriber.
• Proportion of patients recalling that their last injection was given with a new syringe.
• Proportion of patients recalling that their last injection was given with a reuse prevention device.

Injections provided outside of health facilities
In many countries injections are administered outside of health facilities both public and private. These injections are provided at pharmacies, traditional health workers and even by the family members themselves. How safe these injections are remain questionable and it should be safely assumed that these injections are often unsafe.

If an impression is developing that a lot of injections are given outside of health-care system then this should be noted and described separately qualitatively.

Qualitative analysis of data
Programmatic information

• Hepatitis programme communicating risks of hepatitis infection transmission due to unsafe injections.
• HIV programme communicating risks of HIV infection transmission due to unsafe injections.
• National Essential Drug Policy discouraging injection overuse
• Essential drug programme or other similar programmes supplying syringes, needles and diluents and safety boxes.
• Number of injectable medicines on national essential drug list.
• Immunization and family planning services supplying auto disable syringes along with other supplies.
• Existence of a sharps management system.

Additional information

• Qualitative information collected on open ended questionnaire.
• Quality of syringes collected during field trips.
  o Assessing quality of syringe (see box)\(^6\)
• Any additional information about syringes quality

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\(^6\) Quality of Syringe Study. World Health Organization 2003

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Checklist to determine the quality of syringes:

Packaging

• Overall quality of packaging
• Most syringes have blister packing (a permeable membrane through sterilization gas can pass)
• Manufacturing and expiry date
• Lot number

Syringe itself

• Quality of plastic
• Proper graduation lines
• No moisture or stain on the barrel
**Triangulating data**

Triangulating of data is a method to verify whether the information collected can be verified from other sources.

**Table 3: Triangulating results of rapid assessment**

<table>
<thead>
<tr>
<th>Understanding the issue</th>
<th>Prescribers data</th>
<th>Providers data</th>
<th>Patients data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reuse of injection equipment</td>
<td>May not indicate</td>
<td>Observation data</td>
<td>Question about last injection</td>
</tr>
<tr>
<td>Injections in prescription</td>
<td>Review of prescription if the prescriber denied in the interview</td>
<td>May not indicate</td>
<td>May not indicate</td>
</tr>
<tr>
<td>Preference of injections for common ailments</td>
<td>Prescriber interview</td>
<td>May not indicate</td>
<td>Patient interview</td>
</tr>
</tbody>
</table>
Writing the report of rapid assessment

A succinct and well structured report can have a valuable impact among the readers and can help in making quick decisions. The proposed outline is:

1. **Title page**: Authors, location and dates.
2. **Executive summary**: It should include background, methods, results, conclusions and key recommendations (not more than one page; executive summary is usually the most read section of the report).
3. **Introduction**: Description of the problem of unsafe injections in the country, rationale for assessment and key objectives of the rapid assessment (not more than one page).
4. **Methods**: The methodology adopted, description of study setting, population, sample size and sampling technique and how field data was collected and analysed.
5. **Results**: Starting from the determinants of injections and then moving on to the findings of the three drivers of unsafe injections prescribers, providers and patients.
6. **Discussion**: First para of the discussion to highlight the five to six key findings. Subsequent paras to discuss on these and other findings ideally in light of other references; penultimate para to talk about limitations and final para should be conclusion.
7. **Recommendations**: To practically describe key recommendations covering behaviour change, introduction of reuse prevention devices, management of supplies and sharps management and any other practical suggestion.
8. **Appendixes**: Data collection instruments and tables summarizing data from the prescribers, providers and patients/communities.

Sharing the results of rapid assessment

In order to keep the momentum going the results of the assessment should be shared immediately after the analysis is complete. It can be done in following manner:

- Debriefing with the stakeholders discussing results and sharing draft recommendations.
- Sharing one page executive summary as print out.
- Presenting in a crisp PowerPoint.

Timing is of essence to make the best use of evidence. The report should be shared as early as possible after completion of assessment.
Questionnaire for data collection

Questionnaire for in depth interview with the stakeholder
Thank you for sparing time for this interview. I have been invited to assist the Ministry of Health in understanding how a national policy for the safe and appropriate use of injections can be implemented. The answer of following questions can help in understanding the situation.

Question 1: Please describe your responsibilities in health management of in delivery of health-care services.

Question 2: Who administers injections in your country?
- Physicians
- Nurses
- Dentists
- Para medics
- Nursing assistants
- Untrained/informal providers
- Any other:

Question 3: Do you think overuse of injections is a problem in your country?
- What are the factors that contribute towards this problem especially among the prescribers and patients?
- Do you think patients demand injections or do prescribers prescribe them for their own motives?
- How many syringes are sold annually in the country?
- Are syringes produced in the country or imported?
- Has the essential drug list been reviewed to remove unnecessary injectable medicine?
- How many injectable medicines are on the national essential medicine list?
- Were standard treatment guidelines reviewed to remove unnecessary injections?

Question 4: Are you aware of the 2015 WHO injection safety guidelines which recommend exclusive use of reuse prevention syringes for most medical injections?
- Have you seen the guidelines?
- Do you know what reuse prevention syringes are?
- Do you think it is possible to introduce them in your country if the price difference issue is resolved?
- What hurdles do you see in introduction of reuse prevention syringes in your country?

Question 5: Do you think syringes and needles are reused in your country?
- Is hepatitis programme communicating the risk of unsafe injections and its association with hepatitis B and C transmission?
- Is HIV programme communicating the risk of unsafe injections and its association with HIV transmission?
- What type of syringes are used in the curative sector in your country?
• Is EPI programme using auto disable syringes and their supply matches their demand?
• What kind of syringes are used by the family planning programme?
• Do you think shortage of syringe lead to unsafe injection practices?
• Are syringes recycled for plastic or illegal re packaging? Is there any information available about this?

**Question 6:** Are syringes and needles immediately discarded in sharps container in your country?

• Why do health care workers don’t do this?
• Is there a problem with lack of supply

**Question 7:** Is there a health-care waste and sharps management plan in the country?
**Questionnaire for prescribers**

*Thank you for giving your time for this brief interview. I would like to ask a few question about your health-care practices. The information you provide will remain anonymous as your name is not recorded in this form. If you do not wish to answer any particular question please feel free to do so. Your cooperation is once again appreciated.*

| Type of prescriber | 1. Public  
<table>
<thead>
<tr>
<th></th>
<th>2. Private</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question 1:</strong> How many patients do you usually see during an average week?</td>
<td>Number of patients:</td>
</tr>
</tbody>
</table>
| **Question 2:** How many patients are prescribed an injection? | 1. Most of them  
|                                                             | 2. Half of them  
|                                                             | 3. Less than half  
|                                                             | 4. Only those who genuinely need one  
|                                                             | 5. Those who demand  
|                                                             | 6. Any other |
| **Question 3:** In which conditions an injection is usually prescribed? | 1. ___________________  
|                                                             | 2. ___________________  
|                                                             | 3. ___________________  
|                                                             | 4. ___________________  
|                                                             | 5. ___________________ |
| **Question 4:** Which are the three most common injectable medications that you prescribe? | 1. ___________________  
|                                                             | 2. ___________________  
|                                                             | 3. ___________________ |
| **Question 5:** Do patients demand an injection or it is your decision? | 1. Patient demand  
|                                                             | 2. Patient trust my judgement  
|                                                             | 3. Both |
| **Question 6:** If you don’t prescribe an injection do you think you will lose your clientele (applicable to private prescribers only) | 1. Yes  
|                                                             | 2. No  
|                                                             | 3. It does not matter |
| **Question 7:** Could you please name diseases that can be transmitted from unsafe injections such reusing the syringe and needle? | 1. HIV  
|                                                             | 2. Hepatitis B  
|                                                             | 3. Hepatitis C  
|                                                             | 4. Any other: |
| **Question 8:** Do you think you prescribe too many injections? | 1. Yes  
|                                                             | 2. No  
|                                                             | 3. Don’t know |
| **Question 9:** Do you know what reuse prevention or AD syringes are? | 1. Yes  
2. No  
3. Don’t know |
### Checklist to review prescriptions for injections

<table>
<thead>
<tr>
<th>Prescription No:</th>
<th>Medicines prescribed</th>
<th>Antibiotics</th>
<th>Medicines from EDL</th>
<th>Medicine not in EDL</th>
<th>Injection in the prescription</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>10</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

EDL: Essential Drug List
**Questionnaire for interviewing and observing the injection provider**

Thank you for agreeing to participate in the interview. We are trying to understand health-care practices and how injections are used. Your name or any other personal information is not recorded anywhere. All information will remain anonymous.

<table>
<thead>
<tr>
<th>Observation of injection practices (should be done before the interview)</th>
<th></th>
</tr>
</thead>
</table>
| **Type of health facility** | 1. Public  
2. Private |
| **Observation 1:** Type of injection equipment used in the health facility | 1. Single use  
2. Reuse prevention  
3. Sterilizable  
4. NA |
| **Observation 2:** Type of injection equipment used in the health facility for immunization | 1. Single use  
2. AD  
3. Sterilizable  
NA |
| **Observation 3:** If single use or reuse prevention any information about country of manufacture, expiry date and trademark | 1. Yes  
2. No  
3. Could not be observed |
| **Observation 4:** Sharps box available | 1. Yes  
2. No  
3. Could not be observed |
| **Observation 5:** Two handed recapping | 1. Yes  
2. No  
3. Could not be observed |
| **Observation 6:** Presence of sharps in the facility vicinity | 1. Yes  
2. No  
3. Could not be observed |

<table>
<thead>
<tr>
<th>Interview of the provider</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question 1:</strong> Number of injections you provide in a day</td>
<td>Number________________________</td>
</tr>
</tbody>
</table>
| **Question 2:** Could you please name diseases that can be transmitted from unsafe injections such as reusing the syringe and needle? | 5. HIV  
6. Hepatitis B  
7. Hepatitis C  
8. Any other: |
| **Question 3:** How many needlestick injuries did you receive in the last 12 months | Number________________________ |
| **Question 4:** How many doses of hepatitis B vaccine have you received? | Number of doses__________________ |
| **Question 5:** Do you currently have stock of new syringes and needles at your facility? | 1. Yes  
2. No |
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| **Question 5:** Do you have sufficient supply of sharps boxes? | 1. Yes  
2. No  
3. Don't know |
| **Question 6:** How are sharps disposed in your health facility? | 1. Burning  
2. Throwing in the community waste site  
3. Incinerated  
4. Pit burial  
5. Transported to another facility  
6. Any other |
**Questionnaire for patients/community members**

Thank you for agreeing to answer some of the questions today. We are not writing your name or any other personal detail. This information is anonymous. We are going to ask a few questions about health-care practices and injections. Please feel free not to answer any question that you don’t feel like responding to. (Adults to respond for children under 15 years of age)

<table>
<thead>
<tr>
<th>Question 1: During the last six months have you received an injection? (if not skip to question 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Yes</td>
</tr>
<tr>
<td>2. No</td>
</tr>
<tr>
<td>3. Don’t remember</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 2: If yes, who provided the injection?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Nurse</td>
</tr>
<tr>
<td>2. Prescriber (doctor)</td>
</tr>
<tr>
<td>3. Provider</td>
</tr>
<tr>
<td>4. Dentist</td>
</tr>
<tr>
<td>5. A family member</td>
</tr>
<tr>
<td>6. From the pharmacy</td>
</tr>
<tr>
<td>7. Traditional healer</td>
</tr>
<tr>
<td>8. Any other:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 3: Do you remember whether the syringe was new and opened in front of you</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Yes it was new and opened in front of me</td>
</tr>
<tr>
<td>2. No I did not notice</td>
</tr>
<tr>
<td>3. The provider brought it from behind the counter</td>
</tr>
<tr>
<td>4. Don’t know for sure whether it was new or used</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 2: During the last six months have you received an IV infusion (drip)? (If no skip to question 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Yes</td>
</tr>
<tr>
<td>2. No</td>
</tr>
<tr>
<td>3. Don’t remember</td>
</tr>
</tbody>
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<td>4. Dentist</td>
</tr>
<tr>
<td>5. A family member</td>
</tr>
<tr>
<td>6. From the pharmacy</td>
</tr>
<tr>
<td>7. Traditional healer</td>
</tr>
<tr>
<td>8. Any other:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 4: Do you remember how long ago did you receive your last injection?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Yes, it was_________________</td>
</tr>
<tr>
<td>2. Don’t remember</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 5: If yes, who provided the injection?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Nurse</td>
</tr>
<tr>
<td>2. Prescriber (doctor)</td>
</tr>
<tr>
<td>3. Provider</td>
</tr>
<tr>
<td>4. Dentist</td>
</tr>
<tr>
<td>5. A family member</td>
</tr>
<tr>
<td>6. From the pharmacy</td>
</tr>
<tr>
<td>7. Traditional healer</td>
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<tr>
<td>8. Any other:</td>
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<td>3. The provider brought it from behind the counter</td>
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<table>
<thead>
<tr>
<th>Question 7: Do you remember how long ago did you receive an</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Yes, it was_________________</td>
</tr>
</tbody>
</table>
**Question 8:** If yes, who provided the infusion?

1. Nurse  
2. Prescriber (doctor)  
3. Provider  
4. Dentist  
5. A family member  
6. From the pharmacy  
7. Traditional healer  
8. Any other:

**Question 9:** When you go the prescriber for any illness do you ask for injections or do you leave it to the prescriber to decide?

1. Ask for injection  
2. Prescriber decides

**Question 10:** Do you prefer oral medicines over injections?

1. Prefer injections  
2. No sure let the prescriber decide

**Question 11:** Do you think dirty syringes and needles can transmit diseases?

1. Yes  
2. No  
3. Don't know

**Question 12:** Can you name any diseases that can be transmitted with dirty syringes and needles?

1. Don't know  
2. Hepatitis B  
3. Hepatitis C  
4. HIV  
5. Any other:

**Question 13:** Do you know what AD syringe are?

1. Yes  
2. No  
3. Don't know
Appendix A: Key elements of a National Policy on Injection Safety

The key three elements of a National Policy on Injection Safety are:

1. The availability of necessary equipment and supplies, namely a transition to the exclusive use of WHO prequalified AD/ RUP/SIP* syringes for therapeutic injections;
2. Behaviour change among patients and health-care workers to decrease injection overuse and achieve injection safety;
3. Appropriate management of sharps waste.

Equipment and supplies
- RUP/SIP for most medical injections
- Auto-disable (AD) syringes for immunization
- Appropriate types of syringes and needles for curative care
- Norms and standards for equipment
- Central bulk procurement, including safety boxes
- Central management of storage
- Efficient distribution system

Behaviour change
- National behaviour change strategy
- National standards for injection safety
- Incorporation of safe injection practices into minimum standards of care
- Promotion of AD/RUP/SIP
- Promotion of rational use of injections
- Other culturally adapted components of behaviour change based on local needs

Management of sharps waste
- Policy for sharps waste
- Assessment of waste management system
- Selection of appropriate waste disposal systems
- Regulatory framework
- Adequate resources
- Implementation of waste management system
- Training and supervision

*Syringes engineered to prevent reuse are not suitable for certain medical procedures e.g. when administering multiple medicines, maintenance of IV lines, local anaesthesia and nasal feeding. Conventional disposable syringes should be used safely in these and similar instances.
Resources


WHO Healthcare waste management website:  
http://www.who.int/mediacentre/factsheets/fs253/en/