



**WORLD HEALTH
ORGANIZATION**

BASICS II

**BASIC SUPPORT FOR
INSTITUTIONALIZING
CHILD SURVIVAL II**



This document was developed in the context of the Safe Injection Global Network (SIGN) as a collaboration between BASICS II and the World Health Organization.

INJECTION PRACTICES: RAPID ASSESSMENT AND RESPONSE GUIDE

Final version - 1 October 2002



ACKNOWLEDGEMENTS

The Department of Blood Safety and Clinical Technology thanks the United States National Vaccine Program Office, the United States Agency for International Development (USAID) and other donors whose financial support has made the production of this document possible.

BASICS II is funded by the Office of Health and Nutrition of the Bureau for Global Health of USAID and is implemented by the Partnership for Child Health Care, Inc. under contract number HRN-C-00-99-0007-00.

DEVELOPMENT PROCESS

The development of this guide was coordinated by Dr Yvan Hutin from WHO in collaboration with Rebecca Fields from BASICS II. It was initially discussed during an informal meeting of consultants held in March 2002 at BASICS II headquarters in Arlington, VA, USA (meeting report available from WHO upon request). It was then pilot tested in more than twenty countries (assessment reports in press). Finally, it was submitted to public comments through the Internet forum of the Safe Injection Global Network (SIGN) between October 2000 and August 2002.

© World Health Organization 2002

This document is not a formal publication of the World Health Organization (WHO), and all rights are reserved by the Organization. The document may, however, be freely reviewed, abstracted, quoted, reproduced and translated, in part or in whole, but not for sale nor for use in conjunction with commercial purposes.

TABLE OF CONTENTS

Acknowledgements.....	2
Development Process.....	2
Injection Practices Indicators at a Glance	4
Introduction.....	5
Injection overuse and unsafe practices cause infections	5
A strategy for the safe and appropriate use of injections	5
Who Should Use This Guide?.....	6
Persons conducting injection practices assessments at a national or regional level	6
International experts	6
National policy makers or senior management personnel	6
Step 1- Engage Stakeholders.....	7
1.A- Identifying stakeholders	7
1.B- Recognizing the problem	7
Step 2- Describe the Situation.....	8
2.A- Identifying available information, planned studies and surveys	8
2.B- Organizing available information	9
Step 3- Make Assessment Plans.....	11
3.A- Rationale	11
3.B- Proposed timeline for data collection	11
Step 4- Gather Evidence.....	12
4.A- Objective of the data collection	12
4.B- Information sources	12
4.C- Proposed methods	12
Step 5- Develop Conclusions.....	16
5.A- Data analysis	16
5.B- Report writing	20
5.C- Presentation of the results	21
Step 6- Ensure Use.....	22
6.A- Planning	22
6.B- Implementing plans	22
6.C- Evaluating	23
Data Collection Instruments.....	24
Instrument 1: Guide for interviewing stakeholders	24
Instrument 2: Guide for interviewing prescribers	25
Instrument 3: Sample data collection form for the indicator OT8	26
Instrument 4: Guide for interviewing and observing injection providers	27
Instrument 5: Guide for interviewing the general population	28
Appendix 1: Template of a National Injection Safety Plan.....	29
References.....	31

INJECTION PRACTICES INDICATORS AT A GLANCE

PROGRAMME INDICATORS (INPUTS)	INDICATOR	SOURCE
HIV/AIDS prevention and care programme communicating the risk of HIV infection associated with injections	Yes / No	MoH
National drug policy discouraging injection overuse	Yes / No	MoH
Number of injectable medications on the national essential drug list	—	MoH
Essential drugs programme supplying syringes, needles, diluent and safety boxes in quantities matching supplies of injectable medications	Yes / No	MoH
Immunization and family planning services supplying auto-disable syringes and needles in quantities matching supplies of injectable vaccines and contraceptives	Yes / No	MoH
Health care waste management plan within the health system	Yes / No	MoH
DETERMINANTS OF INJECTION PRACTICES (PROCESS)	INDICATOR	SOURCE
INJECTION USE		
Proportion of the population reporting a preference for injections in the case of fever	— / — (%)	Population
Proportion of prescribers reporting a preference for injections among patients in the case of fever	— / — (%)	Prescribers
Proportion of the population recalling that the last injection received has been given at home	— / — (%)	Population
INJECTION SAFETY		
Proportion of the population spontaneously reporting the risk of HIV infection associated with unsafe injections	— / — (%)	Population
Proportion of prescribers spontaneously reporting the risk of HCV infection associated with unsafe injections	— / — (%)	Prescribers
Proportion of health care facilities using sterilizable injection equipment	— / — (%)	Providers
Proportion of health care facilities using single-use injection equipment	— / — (%)	Providers
Proportion of health care facilities using auto-disable injection equipment	— / — (%)	Providers
Proportion of health care facilities with stocks of single-use injection equipment (in the facility or in a nearby public or community pharmacy)	— / — (%)	Providers
Proportion of injections administered by unqualified or family providers	— / — (%)	Population
INJECTION PRACTICES (OUTCOMES)	INDICATOR	SOURCE
INJECTION USE		
Proportion of prescriptions including at least one injection	— / — (%)	Prescriptions
Average number of injections per prescription for prescriptions containing at least one injectable medication	— / — ()	Prescriptions
Average number of injections per person and per year	— / — ()	Population
INJECTION SAFETY		
Proportion of health care facilities where injections are given with a sterile syringe and needle	— / — (%)	Providers
Proportion of health care facilities where used injection equipment can be observed in places where they expose health care workers to needlestick injuries	— / — (%)	Providers
Annual number of needlestick injuries per injection provider	— / — ()	Providers
Proportion of health care facilities where used injection equipment can be seen in the surrounding environment	— / — (%)	Providers

INTRODUCTION

INJECTION OVERUSE AND UNSAFE PRACTICES CAUSE INFECTIONS

In developing countries, the estimated proportion of injections administered with injection equipment reused in the absence of sterilization ranges from 15% to 50%. [1] Surveys conducted in various settings have also indicated that the proportion of prescriptions including at least one injection is high (up to 56%), suggesting that injections are overused to administer medications. [2] As a result of unsafe practices and overuse, injections transmit bloodborne pathogens on a large scale. [1] Annually, worldwide, injections cause an estimated 8-16 million cases of hepatitis B virus (HBV) infection, 2.4-4.5 million cases of hepatitis C virus (HCV) infection, and 80 000 to 160 000 cases of Human Immunodeficiency Virus (HIV) infections. [3] These infections lead to a high burden of chronic disease, disability and death. [4]

A STRATEGY FOR THE SAFE AND APPROPRIATE USE OF INJECTIONS

To prevent injection-associated transmission of bloodborne pathogens, injection frequency should be reduced and safe injection practices should be carried out on a regular basis. At country level, these goals should be reached through a multidisciplinary three-element approach that includes: [5]

- 1) Behaviour change among patients and health care workers to reduce injection overuse and implement safe practices;
- 2) Provision of sufficient quantities of injection equipment and infection control supplies;
- 3) Sharps waste management.

This policy may be implemented with greater effectiveness and at lower cost if an initial assessment is conducted to describe injection practices, their determinants and their adverse effects. This guide proposes a standardized, six-step approach [6] to conduct a rapid assessment of injection practices and propose a public health response.

WHO SHOULD USE THIS GUIDE?

Engaging all to ensure that assessment is followed by action

This guide was not designed to be used by a single person conducting an assessment to produce data. Rather, it is intended as a framework for partners to examine injection practices, their determinants and their consequences so that an action plan can be formulated. Thus more than one type of user may use different portions of this guide.

PERSONS CONDUCTING INJECTION PRACTICES ASSESSMENTS AT A NATIONAL OR REGIONAL LEVEL

Epidemiologists, anthropologists and other public health workers seeking to conduct comprehensive or specific assessment of injection practices constitute the primary audience of this guide.

INTERNATIONAL EXPERTS

International experts, including staff of or consultants to health organizations, will find this guide useful when being asked to assess or evaluate injection practices in countries where unsafe injection practices are suspected or targeted by prevention efforts.

NATIONAL POLICY MAKERS OR SENIOR MANAGEMENT PERSONNEL

Senior management personnel and national policy makers may use this guide as a reference to better understand the information needed to develop policies and plans for the safe and appropriate use of injections.

STEP 1- ENGAGE STAKEHOLDERS

Safe and appropriate use of injections does not require a specific programme, let alone a vertical one. Rather, prevention activities can be integrated to already existing initiatives and services.

1.A- IDENTIFYING STAKEHOLDERS

Key stakeholders include (1) programme for HIV/AIDS prevention and care, (2) essential drugs, (3) immunization, (4) family planning and (5) other curative services (Table 1). Additional stakeholders may also be approached, including those working with the national regulatory authority, Integrated Management of Childhood Illnesses (IMCI), infection control, professional health care workers' associations, United Nations agencies and programmes (e.g., WHO, UNICEF and UNAIDS), the World Bank and Non Governmental Organizations (NGOs).

Table 1: Key programme areas in the Ministry of Health and proposed role in a national safe and appropriate use of injection policy

Key programme areas	Role in a national safe and appropriate use of injection policy
HIV/AIDS prevention and care	✓ Communicating the risk of unsafe injections to patients and health care workers
Essential drugs	✓ Ensuring availability of safe injection equipment, diluent and safety boxes ✓ Promoting rational use of injections within the national drug policy
Immunization and family planning services	✓ Making auto-disable injection equipment and safety boxes available with vaccines and injectable contraceptives [7]
Health care services	✓ Management of sharps waste within the health care waste management plan

1.B- RECOGNIZING THE PROBLEM

Approaching stakeholders from the perspective of their activities will help them recognize the problem (Instrument 1, Page 24). Interviews with stakeholders should be carried out to achieve some broad objectives, including engagement of stakeholders, descriptions of problems and initiatives regarding injection practices within their respective areas and development of an understanding of stakeholders' perceptions regarding injection practices. This understanding will help in communicating the actual results of the rapid assessment back to them.

Stakeholders should be engaged in the preparation and sampling for the assessment. They may want to participate in the data collection and analysis. They must be involved during the development of recommendations.

STEP 2- DESCRIBE THE SITUATION

2.A- IDENTIFYING AVAILABLE INFORMATION, PLANNED STUDIES AND SURVEYS

Stakeholders and key informants can assist the organizers of the assessment in obtaining information already available regarding injection practices, their determinants and their consequences. In addition, they can identify population or health care facility-based surveys that are at the planning stage and that can be used to collect information about injection practices.

CONSEQUENCES OF UNSAFE INJECTIONS AMONG RECIPIENTS

Potential sources of information regarding infections with bloodborne pathogens, abscesses, and other injection-associated adverse events include published and unpublished research reports. Reports may be available that describe the frequency of infection with bloodborne pathogens in the general population (e.g., reports from blood transfusion services regarding the prevalence of infections with bloodborne pathogens among first-time blood donors; population-based surveys; infectious disease surveillance data). Other reports may estimate the frequency of occurrence of injection-associated adverse events (e.g., EPI injection safety reviews reporting the incidence of injection-associated abscesses). Finally, there may be studies that evaluate the strength of the epidemiological association between exposure to health care injections and infection with bloodborne pathogens.

INJECTION PRACTICES AMONG INJECTION PROVIDERS

Besides published and unpublished research reports, other information sources regarding both the frequency and safety of injection may include the following:

POTENTIAL DATA SOURCES ON INJECTION FREQUENCY

Reports citing the proportion of prescriptions that include at least one injection

Data may be available regarding the proportion of prescriptions that include at least one injection (WHO/DAP OT8 indicator). [8,9] This indicator is a rapid method of assessing injection use in health care facilities. More information about this indicator can be found on page 16.

Population-based surveys

Population-based surveys (e.g., Multi-Indicator Cluster Surveys [MICS], Demographic and Health Surveys [DHS], vaccine coverage surveys and community IMCI surveys) are potential sources of information to estimate the frequency of injections in the population.

Planned surveys that can be used to estimate injection frequency:

Identification of planned community surveys may provide opportunities to add items regarding injection use. Such items may be extracted from Instrument 5, Page 28.

Surveys already conducted that may provide information on injection use:

IMCI community surveys

IMCI community surveys are designed to evaluate 12 household-level key practices relating to IMCI. Some of the community IMCI survey tools currently under development contain items regarding health care seeking behaviour of potential relevance to injection practices.

DHS

DHS surveys are national surveys of women of reproductive age and their children under five years of age. DHS collects information of potential interest to investigators attempting to describe injection practices, including:

- 1) Immunization history;
- 2) Illnesses among children in the last two weeks (including health care seeking behaviour and use of injections to treat diarrhoea if applicable);
- 3) Family planning methods;
- 4) Low risk behaviours to prevent HIV infection (including avoidance of injections).

Some countries may collect additional information relating to:

- 1) Behaviours that place the individual 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;
- 2) Malaria, including health care seeking behaviour during the last episode of malaria and medication used for treatment (without a specific reference to injections);
- 3) Health expenditures, which may include information on health care seeking behaviours.

POTENTIAL DATA SOURCES ON INJECTION SAFETY

Potential information sources regarding unsafe injection practices include the WHO tool to assess injection safety, [10] EPI injection safety reviews, Global Alliance for Vaccine and Immunization (GAVI) assessments and other health care facility surveys. Planned facility surveys may provide an opportunity to add items regarding injection safety to the data collection instruments.

DETERMINANTS IN THE SYSTEM

There are few potential information sources regarding the behavioural and system determinants of poor and good injection practices. A recent article reviewed studies that aimed at identifying the determinants of unsafe injection practices. [11] In addition, a qualitative assessment tool is available from WHO to identify the determinants of unsafe injection practices in the system. [12]

2.B- ORGANIZING AVAILABLE INFORMATION

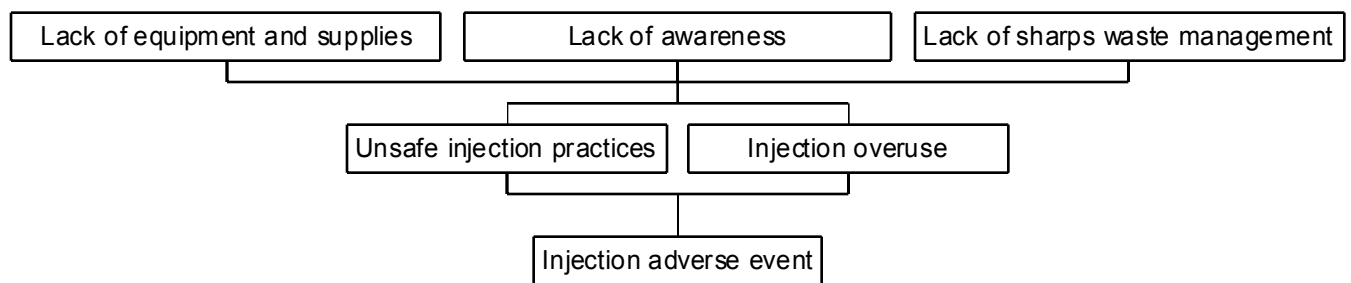
Information gathered from key stakeholders can serve as the basis for a preliminary description of current injection practices, their determinants and their consequences (Figure 1). Once collected, such information needs to be organized to address the following issues:

- 1) **What are the consequences to injection recipients of poor injection practices?**
These may include infections with bloodborne pathogens or other infectious agents, injuries and abscesses.
- 2) **What are the practices among injection providers in terms of safety and frequency?** Injection providers may include recipients themselves (self-injection), the family, formally trained health care workers, health care workers who were not formally

trained, informal injection providers (e.g., drug sellers) and traditional health care workers (e.g., traditional healers or traditional birth attendants).

- 3) **What are the determinants of good and bad injection practices within the larger system?** This system includes government ministries, NGOs, professional associations, consumers, corporations (e.g., manufacturers of drugs or of injection equipment and their representatives) and universities that influence injection recipients and injection providers to perpetuate poor injection practices. Behavioural, supply and waste management issues should be addressed (e.g., absence of awareness that unsafe injections cause infections, absence of sharps boxes, absence of waste treatment facilities).

Figure 1: Injection-associated adverse events are caused by poor injection practices that are a consequence of behavioural and system determinants.



STEP 3- MAKE ASSESSMENT PLANS

3.A- RATIONALE

Review of the information available will determine information needs in the area of

- 1) The determinants of poor and good practices in the system;
- 2) Injection practices, including injection overuse and proportion of unsafe injections among injection providers;
- 3) The consequences of poor practices among recipients.

The proposed rapid assessment methods consist of information collection from:

- 1) Prescribers (e.g., physicians), using interviews and reviews of prescriptions;
- 2) Injection providers (e.g., nurses or other providers administering the majority of injections in the public sector), using interviews and observations in health care facilities;
- 3) The general population, using interviews.

3.B- PROPOSED TIMELINE FOR DATA COLLECTION

Table 2 describes a proposed timeline for a three-week assessment for one team to collect data from 20 health care facilities distributed across four districts. Other timelines may be constructed on the basis of this template according to the proposed sample size and the human resources available.

Table 2: Proposed scope of work for a three-week data collection of injection practices using a convenience sampling in four districts

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Week End
Week 1	Meeting stakeholders	Meeting stakeholders	Travel to site 1	Fieldwork site 1	Fieldwork site 1	Travel to site 2
Week 2	Fieldwork site 2	Fieldwork site 2	Travel to site 3	Fieldwork site 3	Fieldwork site 3	Travel to site 4
Week 3	Fieldwork site 4	Fieldwork site 4	Travel back	Preliminary analysis	Debriefing	--

STEP 4- GATHER EVIDENCE

4.A- OBJECTIVE OF THE DATA COLLECTION

The objective of the data collection is to collect information regarding a core set of indicators reflecting injections practices, their determinants and their consequences in a way that will make the results generalizable to a wider national context.

4.B- INFORMATION SOURCES

The rapid assessment method entails the collection of information from three different sources:

- 1) Prescribers;
 - 2) Injection providers;
 - 3) The general population.
-

4.C- PROPOSED METHODS

SAMPLING STRATEGY

Health care facilities will be used to identify prescribers, injection providers and members of the general population.

The sampling strategy includes two steps:

- 1) Sampling of primary health care facilities from the list of primary care facilities* in the country;
- 2) Selection of prescribers, injection providers and members of the general public on the basis of the sampled primary health care facilities.

SAMPLING OF PRIMARY HEALTH CARE FACILITIES

A number of potential options may be chosen, according to the level of data quality required. Stakeholders who will be the primary users of the information need to be engaged in any decisions regarding the level of data quality desired and the resources needed for the data collection.

* The majority of injections are usually administered in primary care facilities. In addition, assessment in hospitals would require different checklists to evaluate the safety of intravenous infusions. The choice of primary health care facilities is not meant to represent all injections given in the country. However, injections given in health care facilities are probably a useful reflection of all injections given in a country.

In an ideal world, all studies would be conducted perfectly. Advanced planning may allow this rapid assessment to be conducted at low cost if it can be integrated with other surveys. However, if it cannot be integrated, stakeholders must decide the price they can pay for the data quality they will want to make decisions.

Option 1: Statistically representative samples

Option 1a: Representative cluster sample of 80 primary health care facilities

In this method that uses a cluster sampling approach, 10 facilities are selected in each of eight clusters, using the approach proposed in the WHO tool to assess the safety of injections. [10] In short, this sampling procedure involves two steps: 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 sample design provides a +/- 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: Representative random sample of 20 primary health care facilities

Using a random sample approach, 20 facilities may be selected from the national list of primary health care facilities. Random sampling may be more adapted in selected geographical settings. The sample size of 20 has been proposed to assess prescriptions in health care facilities. [9] If a random sample of 20 health care facilities is chosen, this option will provide less precision than option 1a.

Option 2: Convenience sample of health care facilities

When a statistically-representative sample of health care facilities cannot be conducted, a convenience sample may be used. In this case, a number of health care facilities are selected in a way that (1) is believed by the investigators to be representative of the national situation and (2) will be considered acceptable and believable by the stakeholders who will be using the results of the assessment. Overall, visiting 20 health care facilities should be considered a minimum.

Box 2: Example of convenience sampling of health care facilities

Choice of districts

In a situation of limited resources for the rapid assessment where only four districts can be visited, a choice may be made to visit the capital city, two semi-rural districts chosen to be representative of the average conditions in the country and one remote district thought to be representative of the worst conditions seen in the country.

Choice of health care facilities

If only 20 facilities can be visited, a choice may be made to select five facilities in each district.

SELECTION OF PRESCRIBERS, INJECTION PROVIDERS AND INDIVIDUALS

Selected health care facilities are used to select prescribers and injection providers. Individuals from the general population should be sampled from the catchment area of the health care facility.

Selection of prescribers

In each health care facility, one or more prescribers are selected at random. For each prescriber, 30 prescriptions selected at random will be reviewed.

Selection of injection providers

In each health care facility, one or more injection providers are selected at random.

Selection of individuals from the general population

A pre-set number of individuals are selected at random from the population using the health care facility (i.e., catchment population). This may be achieved through a number of methods proposed that are presented here in order of decreasing data quality:

- 1) Sampling from a list of households available in the villages or communities that constitute the catchment population;
- 2) Sampling using field methods of randomization (e.g., spinning a bottle) in the villages or communities that constitute the catchment population;
- 3) Sampling from a list of health care facility users maintained at the facility;*
- 4) Selecting a convenience sample of the population in the street or at the market of the village where the facility is located;
- 5) Selecting patients at random among those waiting for health care at the facility.†

If the fourth or the fifth options are chosen, the sample can be made more representative by recruiting participants by age and gender in proportion identical to the general population.

SAMPLE SIZE

Sample size calculations may be conducted to optimize the sample size according to the desired precision and operational constraints. At a minimum, the final sample should contain at least 20 prescribers, 20 injection providers, 100 participants from the general population and 600 prescriptions.

DATA COLLECTION

DATA COLLECTION FROM PRESCRIBERS

A standardized instrument is proposed to interview prescribers (see Instrument 2: Guide for interviewing prescribers Page 25). In addition, a random sample of prescriptions from each prescriber should be reviewed to calculate the proportion of prescriptions including at least one injection (see Instrument 3: Sample data collection form for the indicator OT8, Page 26).

* This can only be done when all patients' records are kept in the health care facility (e.g., in former socialist economies of Eastern and Central Europe).

† This choice will create a bias and over-represent the population using the sampled health care facilities.

Box 3: Estimating the proportion of unnecessary injections

This rapid assessment does not propose to estimate the proportion of injections that are unnecessary. Tools to assess the proportion of unnecessary injections have been proposed. These tools, which are methodologically more complicated, are based upon:

- The percentage of injection use for tracer conditions (cough, cold, and diarrhoea);
- The proportion of unnecessary injections calculated using standard treatment guidelines. [13]

Assessing the appropriateness of injections is not simple and is beyond the scope of any rapid assessment. However, more information about the tools to assess appropriateness of injection use can be found elsewhere. [14,15]

DATA COLLECTION FROM INJECTION PROVIDERS

A standardized instrument is proposed to collect information from injection providers (see Instrument 4: Guide for interviewing and observing injection providers, Page 27). Because the sterility of a newly opened package of syringes/needles depends on the quality of the equipment, it is recommended to record the trademark and country of manufacturers for the sets observed in use. In addition, it may be useful to purchase of a few sets of each trademark to (1) collect information on retail prices and (2) keep samples of equipment for which the quality is doubtful. If an additional level of detail is needed regarding various specific infection control steps while giving injections, advanced instruments to describe injection practices more extensively are available from the WHO tool to assess the safety of injections. These instruments can be substituted for Instrument 4. [10]

Box 4: The challenge of describing unsafe injection practices outside of the public health care system

In selected situations (e.g., Middle East, South Asia and some parts of Africa), a high proportion of injections are administered outside of the formal, public health care system. These injections may be administered by a variety of injection providers, including recipients themselves (self-injection), the family, formally-trained health care workers, health care workers who were not formally trained, informal injection providers and traditional health care workers. The safety of injections administered by these injection providers may differ substantially from those given in the public health care system. If interviews from individuals in the general population suggest that injections given outside of the public health care system are common, an attempt should be made to describe –at least qualitatively- the safety of these injections through interviews and observation of these private or informal injection providers, using Instrument 4, Page 27.

DATA COLLECTION FROM THE POPULATION

A standardized instrument is proposed to collect information from the members of the general population (see Instrument 5: Guide for interviewing the general population, Page 28). Adult respondents should be asked to answer questions pertaining to children under 15 years of age. To allow comparisons across settings using an annual number of injections per person, collection of information at the individual level is preferred to collection of information at the household level (household sizes and age structure may differ). [16,17]

STEP 5- DEVELOP CONCLUSIONS

5.A- DATA ANALYSIS

Close collaboration with national stakeholders in analyzing the data will facilitate future use of the evidence (see injection practices indicators at a glance, page 4)

ANALYSIS OF QUANTITATIVE DATA

Indicators to be calculated on the basis of data collected from prescribers, including prescription review

Proportion of prescriptions including at least one injection (OT8 indicator)

This indicator belongs to a set of structural, process and outcome indicators developed by WHO to monitor national drug policies. [8,9] Among outcome indicators, indicator OT8 provides information regarding rational use of injections. OT8 is defined as "the number of prescriptions with at least one injection, out of the total of prescription surveyed". The numerator is obtained by adding the number of prescriptions with at least one injection (excluding immunizations [9]). The denominator is the total number of prescriptions studied.

$$OT8 = \frac{\text{Prescriptions with at least one injection}}{\text{Total number of prescriptions surveyed}} \times 100$$

The OT8 indicator is calculated on the basis of prescription review (reference method). However, calculation of the self-reported proportion of the prescriptions that include at least one injection may be useful in some settings to triangulate and verify the results (e.g., in some settings where the prescriber administers injections himself, he may not actually record them as a prescription).

Other indicators

- Average number of injections per prescription for prescriptions containing at least one injectable medication.
- The proportion of prescribers reporting a patient's preference for injections in the case of fever.
- Proportion of prescribers spontaneously reporting the risk of infection with HBV, HCV and HIV associated with unsafe injections.

Indicators to be calculated on the basis of data collected from injection providers

- The proportion of health care facilities where injections are observed to be given with a sterile syringe and needle.
- Proportion of health care facilities where used injection equipment can be observed in places where they expose health care workers to needlestick injuries.
- The reported annual number of needlesticks per injection provider.

- The proportion of health care facilities where used injection equipment can be seen in the surrounding environment.
- The ratio of therapeutic to immunization injections (reported work load).
- Proportion of providers spontaneously reporting the risk of infection with HBV, HCV and HIV associated with unsafe injections.
- The proportion of health care facilities using sterilizable injection equipment.
- The proportion of health care facilities using single-use injection equipment.
- The proportion of health care facilities using auto-disable injection equipment for immunization injections.
- The proportion of health care facilities using auto-disable injection equipment for curative injections.
- The proportion of injection providers having stocks of single-use injection equipment in their health care facility or in a nearby public or community pharmacy. *
- The proportion of injection providers reporting sufficient supplies of sharps containers.

Indicators to be calculated on the basis of data collected from the general population

- The proportion of patients questioned who report a preference for injections for the treatment of fever.
- Proportion of persons questioned spontaneously reporting the risk of infection with HBV, HCV and HIV associated with unsafe injections.
- The average number of injections per person and per year (self-reported injections)[†].
- The ratio of therapeutic to immunization injections (self-reported injections).
- The proportion of the population questioned who recalled that the last injection received had been given by an informal provider.[‡]
- The proportion of the population who recalled that the last injection received had been given at home, in a primary care facility and in a hospital.[§]
- The proportion of the population who recalled receiving their last injection with new, single-use injection equipment coming from a sealed packet or fitted with two caps.[‡]

* At the time of the visit.

[†] The distribution of the frequency of injections received is usually skewed to the right. A small proportion of the population (e.g., diabetics) receives a substantial proportion of all injections. Thus, population surveys using a small sample size may underestimate the annual number of injections per person because none of the persons receiving many injections were included in the sample.

[‡] Injections received more than one year ago should be excluded from this analysis.

[§] Injections received more than one year ago should be excluded from this analysis.

ANALYSIS OF QUALITATIVE DATA

Programme inputs

- Programme for HIV/AIDS prevention and care communicating the risk of HIV infection associated with injections.
- Existence of elements discouraging injection overuse in national drug policy. This includes: (1) review of the essential drug list to remove unnecessary injectable medications and (2) review of standard treatment guidelines to eliminate use of unnecessary injections.
- Essential drug programme supplying syringes, needles, diluents and safety boxes in quantities matching supplies of injectable medications.
- Number of injectable drugs on the national essential drug list.
- Immunization and family planning services supplying auto-disable syringes and needles in quantities matching supplies of injectable vaccines and contraceptives (the "bundling" policy recommends that donors and lenders supplying injectable vaccines and contraceptives should cover these costs). [7]
- Health care system managing sharps waste.

Other qualitative information

- Top reported conditions for which injections are used (prescribers).[†]
- Top reported medications administered most commonly (prescribers).[†]
- Other qualitative information collected on open-ended questions on the questionnaire.
- Quality of the syringes sampled in the field (see Box 5).

Box 5: Quick checklist to assess the quality of single-use injection equipment in the field

- ✓ Mention of the name and address of manufacturer or supplier
- ✓ Mention of the country of production
- ✓ Mention of the word "sterile", "For single-use" and/or single-use logo (a number "2" crossed out)
- ✓ Mention of the lot number prefixed by "LOT"
- ✓ Mode and date of sterilization
- ✓ Sealed package [or sealed caps on the needle and on the plunger]
- ✓ Visible graduations
- ✓ Absence of stains and moisture on the syringe

* "Bundling" refers to the inclusion of the costs of auto-disable syringes and safety sharps boxes in the costs of good quality vaccines provided by donors and lenders as described in the WHO/UNICEF/UNFPA/IFRC 1999 policy statement. [7] "Bundling" has no physical connotation and does not imply that items must be "packaged" together.

[†] Information about this is best obtained by review of records and/or observation. Thus, these findings are only part of an explorative survey of prescribers' opinion using qualitative interviews.

Note: Any other element suggesting that the syringe and needle set is not sterile should be noted.

TRIANGULATION AND COMPARISONS

A number of the proposed indicators use data from different sources to estimate the same figures. Comparing these estimates permits a triangulation that may either validate or call into question the results. In addition, the proportion of prescribers, members of the general population and injection providers spontaneously reporting risks associated with unsafe injections can be compared across population groups.

Table 3: Proposed triangulations and comparisons to better understand the results of the rapid assessment

2. Review data from these information sources:			
1. To understand the situation regarding the topics below:	Prescribers' data	Population data	Injection providers' data
Prescriptions including injections	Prescription review is the reference method	N/A	N/A
	Prescriber interviews is an alternative method		
Ratio of immunization to therapeutic injections	N/A	Interviews regarding last injection is the reference method	Reports from injection providers is an alternative method
Reuse of equipment	N/A	Interviews regarding last injection is an alternative method	Observation of injections is the reference method
Preference for injections in the case of fever	Preference for injection among patients can be compared as expressed by the population and as perceived among prescribers		N/A
Spontaneous report of the risk of infection with bloodborne pathogens associated with injections	The proportion of prescribers, members of the general population and providers spontaneously reporting the risk of HBV, HCV and HIV infection may be compared		

The following outline may be used as a template for concise, efficient report writing.

TITLE (ONE PAGE)

Authors, date and locations.

EXECUTIVE SUMMARY (ONE PAGE)

Including background, methods, results, conclusions and proposed recommendations.

INTRODUCTION (ONE PAGE)

General injection practices issues, reasons motivating the assessment and proposed objectives.

METHODS (ONE PAGE)

National stakeholders interviewed. Study population (including prescribers, providers and population), sampling methods, sample size, data collection and practical organization of the fieldwork.

RESULTS (ONE PAGE)

Salient results may be presented according to (1) unsafe practices, including those exposing the recipient, the health care worker or the community to infections, (2) their determinants and (3) their consequences.

DISCUSSION (ONE PAGE)

Summarizing results, discussing the practices that endanger the injection recipient (identified determinants, proposed solutions), discussing the practices that endanger the injection providers (identified determinants, proposed solutions) and discussing the practices that endanger the community (identified determinants, proposed solutions).

RECOMMENDATIONS (ONE PAGE)

Recommendations can be presented for the categories of (1) behaviour change, (2) provision of equipment and supplies and (3) sharps waste management. To systematically and comprehensively address a range of possible actions, recommendations can be organized around the outline for a safe and appropriate use of injection strategy (Appendix 1). These recommendations represent suggestions from assessment organizers to the various stakeholders and not prescriptive final statements.

APPENDICES

- Three tables summarizing the data collected from (1) providers, (2) prescribers and (3) the general population. (see injection practices indicators at a glance, page 4).
- Data collection instruments.

5.C- PRESENTATION OF THE RESULTS

Results of the assessment should be communicated to all stakeholders immediately after the analysis is completed. Activities may include:

- Assessment debriefing with all stakeholders to discuss results and draft recommendations;
- Communication of a one-page executive summary that includes key indicators and key proposed recommendations;*
- Preparation of a slide presentation to stakeholders who can subsequently show it to other audiences.

Availability of a final report within the month following the rapid assessment will increase the chances of efficient use of the evidence.

* Before the departure from the country in the case of international consultants.

STEP 6- ENSURE USE

6.A- PLANNING

PLAN OF ACTION

Experience with rapid assessments indicates that the formulation of a draft plan of action during a workshop attended by all stakeholders soon after the assessment increases the probability of effective action. Appendix 1, page 29, summarizes the key elements of a national action plan that includes objectives, core interventions, target groups and indicators. Inclusion of realistic, informed costing and budgeting will facilitate the identification of a funding source.

ADVOCACY

Maintenance of communication between all stakeholders ensures long-term usefulness of the initial assessment. Advocacy is needed to persuade stakeholders that safe and appropriate use of injections is a high enough priority on their agenda and that it is a feasible undertaking. Key components of an advocacy strategy for the safe and appropriate use of injections may include: [18]

- 1) A summary document describing the full social and economic dimension of poor injection practices in the country. This document, based upon local information, should emphasize that safe and appropriate use of injections is about (a) reducing the out-of-pocket expenses wasted in unnecessary injections, (b) preventing chronic viral infection leading to substantial disability and death and (c) strengthening health systems through better quality of health care services delivery;
- 2) Communication with the general public (e.g., through newspaper articles and television reports) to describe poor injection practices, the proposed interventions to improve them and the steps that the public can take to demand safe injections from providers;
- 3) Local and international success stories that demonstrate the possibility of reducing or eliminating poor injection practices.

6.B-IMPLEMENTING PLANS

Plans to achieve safe and appropriate use of injections should address three broad areas, including (1) behaviour change, (2) provision of supplies and (3) sharps waste management. [5]

BEHAVIOUR CHANGE

The identified determinants of poor and safe injection practices serve as the basis for formulating behaviour change strategies to reduce injection overuse and achieve safe practices. Such strategies aim at promoting six key behaviours. Patients must (1) communicate a preference for oral medications and (2) demand safe equipment when needing injections. Prescribers must (3) prescribe oral drugs whenever possible. Injection providers must (4) use new, single-use injection equipment for each injection, (5) collect dirty sharps without recapping immediately after use in a sharps container and (6) manage sharps waste safety.

PROVISION OF EQUIPMENT AND SUPPLIES

Assuring the availability of injection equipment and sharps collection boxes in sufficient quantities at the right time and place helps to provide a working environment that supports safer behaviours.

Implementation of plans to increase the availability of supplies needs to integrate the context of the national strategy for pharmaceutical supplies and its financing mechanisms. Logistics systems also need to be revised to ensure that commodities, including safety boxes, are reliably delivered in adequate quantities to all service delivery points, including outreach sites.

Box 6: Choice of injection equipment to be used

The choice of injection equipment to be recommended (sterilizable, single-use or auto-disable) may be an issue for which consensus is difficult to reach. It will be most usefully solved through discussions of the results of the assessment with all stakeholders. Two elements should be taken into consideration. First, WHO best practices recommend single-use injection equipment (standard or auto-disable) for all injections. [19] Second, WHO and UNICEF recommend that all immunization services should exclusively use auto-disable injection equipment by the end of 2003. [7] **Sterilizable injection equipment should only be considered if (1) sufficient quantities of single-use injection equipment can not be made available and (2) if the quality of the sterilization is documented in registers with Time Steam Temperature (TST) spot indicators for all injections.** Experience in many developing and transitional countries indicate that this second condition is rarely met and that only single-use injection equipment made available in sufficient quantities can ensure the safety of injections.

SHARPS WASTE MANAGEMENT

Sharps waste management is best handled in the general context of the management of all health care waste. An “Aide mémoire” for health care waste management summarizes the key elements of a national strategy, including (1) a national policy framework, (2) an integrated, streamlined system from waste production to final disposal, (3) training at all levels and (4) the availability of waste management options. [20]

6.C- EVALUATING

Using the initial assessment results as a baseline measure, indicators identified as critical by all stakeholders during the initial assessment can be used for ongoing collection of information.

INDICATORS OF INJECTION FREQUENCY AND SAFETY

Indicators of injection frequency

While injection frequency surveys are time-consuming and cannot be conducted regularly to monitor impact, the proportion of outpatient visits followed by an injection (OI8) is an indicator that is easy to use and has been used by WHO for many years. The annual number of injections per person can only be used in a before/after comparison if (1) the sample used is representative and large enough and (2) the sample size is identical in the two surveys and doubled to ensure sufficient statistical power for the comparison.

Indicators of injection safety

A simplified version of the injection safety survey data collection instrument such as proposed in the WHO tool, [10] possibly restricted to practices identified to be unsafe (e.g., frequent two-handed recapping), can be used for routine data collection during supervisory visits to monitor the proportion of unsafe injections.

DATA COLLECTION INSTRUMENTS

INSTRUMENT 1: GUIDE FOR INTERVIEWING STAKEHOLDERS

Concerns have been expressed over the use of injections in your country. I have been invited to assist the Ministry of Health in understanding the situation so that a national policy for the safe and appropriate use of injections can be implemented. The following few questions will help me understand the situation better. Thanks for taking a moment to answer them.

1. Can you describe your activities in the field of public health and/or health care service delivery?
2. Who administers injections in your country?
 - Nurses?
 - Physicians?
 - Dentists?
 - Informal providers?
 - Others?
3. Do you think that injections are overused in your country?
 - What factors among patients and health care workers contribute to injection overuse?
 - How many syringes and needles are sold annually in the country?
 - Are syringes and needles used in the country imported or locally produced?
 - Was the essential drug list reviewed to remove any unnecessary injectable medication?
 - How many injectable medications are there on the national essential drug list?
 - Were standard treatment guidelines reviewed to remove use of unnecessary injections?
4. Do you think that syringes and needles are reused in the absence of sterilization in your country?
 - Is the HIV/AIDS prevention and care programme communicating the risk associated with unsafe injections to patients and health care workers? If yes, by what means do they do so?
 - Is the essential drug programme procuring single-use injection equipment, diluent and safety boxes to match deliveries of injectable drugs?
 - Is the Expanded Programme on Immunization (EPI) “bundling” auto-disable injection equipment to match deliveries of vaccine?
 - Does the Family Planning programme “bundle” auto-disable injection equipment to match deliveries of injectable contraceptives?
 - What factors among patients and health care workers contribute to unsafe practices?
 - What kind of injection equipment is used in curative health care services?
 - Do you think that shortages of syringes and needles contribute to unsafe injection practices?
 - Are syringes recycled for plastic or illegal re-packaging? What kind of information supports this?
5. Are syringes and needles immediately discarded in sharps containers in your country?
 - If no:
 - What are the attitudes among health care workers that cause that?
 - Have there been any problems with lack of supplies that have affected their use or non-use?
6. Are syringes and needles appropriately disposed of in your country?
 - Do health care services have a waste management plan?
 - If no:
 - What attitudes explain this situation?
 - What types of constraints explain this situation?
7. Could you please describe any specific information or studies regarding injection practices, their determinants and their consequences in your country?

INSTRUMENT 2: GUIDE FOR INTERVIEWING PRESCRIBERS

Greetings! As we are working here to understand how injections are used, I would like to ask you a few questions about how you prescribe injections. The information I will collect will be recorded anonymously and I will not write your name on this form. As we go through the questionnaire, please feel free not to answer if you don't wish to give additional information.

A. How many outpatients do you usually see during an average week		___ Patients
Of these, for how many would you usually make a prescription that includes at least one injection?		___ Patients
B. For those to whom you prescribe at least one injection, how many injections on average would the total treatment typically include?		___ Injections
C. What are the three diseases for which you prescribe an injection most often?		
1-	2-	3-
<i>Comments:</i>		
D. What are the three injectable medications that you prescribe most often?		
1-	2-	3-
<i>Comments:</i>		
E. When you prescribe an injection, who usually gives the injection to the patients? (One or more answers)		
1-	2-	3-
<i>Comments:</i>		
F. What kind of medications do patients prefer when they present at an outpatient clinic with a febrile illness?		
1- Injections	2- Oral medications or other non injected medications	3- Either 9- Don't know
<i>Comments:</i>		
G. Could you name diseases that may be transmitted through unsafe injections? (Circle when spontaneously mentioned)		
1- HIV	2- HCV	3- HBV
Others: List:		
H. Do you think that you prescribe too many injections?		
1- Yes	2- No	3- Don't know
<i>Why:</i>		
<i>If yes, what could help you to prescribe less injections:</i>		

INSTRUMENT 3: SAMPLE DATA COLLECTION FORM* FOR THE INDICATOR OT8 †

Prescription No.	Drug prescribed	Anti-biotic ‡	From EDL §	Not from EDL	Injection ‡
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

* Adapted from a WHO/DAP document. May be used to calculate other rational drug use indicators. [8]









† Proportion of prescriptions including at least one injection. Three copies of this form are needed for each prescriber so that information is collected regarding 30 prescriptions.

‡ Tick if yes.

§ Essential drug list.

INSTRUMENT 4: GUIDE FOR INTERVIEWING AND OBSERVING INJECTION PROVIDERS

Greetings! We are working to understand how injections are used. I would like to observe how you give injections and to ask you a few questions. Please feel free not to answer if you don't wish. The information collected will be recorded anonymously and I will not write your name on this form.

Fill only one form for each injection provider			
Observation of one injection:			
A. Type of injection equipment used in the health care facility for curative injections	<input type="checkbox"/> Sterilizable <input type="checkbox"/> Single-use	<input type="checkbox"/> Auto-disable <input type="checkbox"/> N/A	
B. Type of injection equipment used in the health care facility for immunization	<input type="checkbox"/> Sterilizable <input type="checkbox"/> Single-use	<input type="checkbox"/> Auto-disable <input type="checkbox"/> N/A	
C. Use of new, single-use syringe and needle OR sterilizable syringe and needle sterile according to Time Steam Temperature (TST) spot indicator *	1. Yes 	2. No 	
If single-use, trademark and country of manufacture of the syringe: _____			
D. Presence of dirty sharps in places where they expose health care workers to needlestick injuries	1. Yes 	2. No 	
<i>Comments:</i>			
E. Two-handed recapping	1. Yes 	2. No 	
<i>Comments:</i>			
F. Presence of used sharps in the immediate surroundings of the health care facility	1. Yes 	2. No 	
<i>Comments:</i>			
Interview of the injection provider:			
G. How many injections do you give in one day? _____	___ Therapeutic	___ Vaccinations	
H. Could you name diseases that may be transmitted through unsafe injections? (Circle when spontaneously mentioned)			
1. HIV	2. HCV	3. HBV	
Others, list: _____			
I. How many needlestick injuries have you had during the last 12 months?	___ Injuries		
<i>Comments:</i>			
J. How many doses of hepatitis B vaccine have you ever received?	___ Doses		
K. Do you currently have stocks of new, single-use syringes and needles in your facility or at a nearby public or community pharmacy?			
1- Yes	2- No	3- Don't know	
<i>Comments:</i>			
L. Do you have sufficient quantities of sharps boxes to dispose of sharps safely?			
1- Yes	2- No	3- Don't know	
<i>Comments:</i>			
M. How are sharps waste disposed of in your health care facility?			
1- Open incineration	2- Protected incineration	3- Incinerator	4- Burial in a pit
5- Dumping (regular trash)	6- Other		

* If an injection is about to be given with non-sterile injection equipment, the procedure should be tactfully interrupted and the form should be filled as if the injection had been given with non-sterile equipment.

INSTRUMENT 5: GUIDE FOR INTERVIEWING THE GENERAL POPULATION

Greetings! As we are working here to understand how injections are used, I would like to ask you a few questions. Please feel free not to answer if you don't wish. The information collected will be recorded anonymously and I will not write your name on this form.

Adult care takers should respond for children under 15 years of age	
A. Age: ___ Years	B. Gender : ___ Male ___ Female
C. During the last three months that is between <date> and <date> did you receive an injection or an IV infusion? (Prompt) The potential persons who may have given you an injection or an IV infusion include your doctor, your nurse, your dentist, a relative, any other person or caregiver or yourself. 1 - Yes If yes, how many? _____ 2- No	
D. (If yes to question C) How many of these injections were given by a health care worker for the purpose of a vaccination? _____	
E. Can you remember the last time that you received an injection? 1 – Yes, Date: _____ 2 – No	
F. (If yes to question E) Can you remember who gave you this last injection? 1 – A medical doctor 2- A nurse 3- A dentist 4- A traditional healer 5- Someone else 6- Me, myself 7- A pharmacist 8- I don't remember	
G. (If yes to question E) Can you remember where you received this last injection? 1- Clinic 2- Hospital 3- Dental office 4- Home 5- Don't know	
H. (If yes to question E) Can you remember where the needle and the syringe that were used to give you this last injection came from? 1 – From a blister package 2- It was fitted with two caps 3- From a pot of tepid water 4- From a sterilizer 5- Other (specify)_____ 6- I don't know/ remember	
I. (If yes to question E) Can you remember what you paid for this injection? ___ For medication + ___ For the syringe + ___ For the service = _____ Total	
J. Have you ever been accidentally stuck by a injection needle that was left in the garbage or in the environment: 1 – Yes _____ Times 2 – No 3- Don't remember	
K. When you are sick with a febrile illness, what is the treatment that you prefer to receive? 1 – An injection 2 - A medication by mouth 3- I don't care	
L. Do you think that dirty syringes can transmit diseases? 1 – Yes 2 – No 3- I don't know	
<i>If yes, which</i> (Circle when spontaneously mentioned) 1- HIV 2- HCV 3- HBV 3- Abscesses 4 Other (specify): _____	

APPENDIX 1: TEMPLATE OF A NATIONAL INJECTION SAFETY PLAN

1. BEHAVIOUR CHANGE

HIV PREVENTION AND CARE PROGRAMME TO COMMUNICATE THE RISK OF HIV INFECTION ASSOCIATED WITH POOR INJECTION PRACTICES

<u>Objectives</u>	<u>Core interventions</u>	<u>Beneficiaries/ Target groups</u>	<u>Indicators</u>
Achieve safe injection practices	Create consumer demand for new, single-use injection equipment <ul style="list-style-type: none"> ▪ Education materials ▪ Mass media 	Patients	✓ Proportion of the population spontaneously reporting the risk of HIV infection associated with unsafe injections
	Ensure use of new, single-use injection equipment <ul style="list-style-type: none"> ▪ Pre-service and in-service training 	Injection providers (e.g., nurses)	✓ Proportion of health care facilities where injections are given with a sterile syringe and needle
	Protect health care workers from needlestick injuries <ul style="list-style-type: none"> ▪ Endorsement of best practices by nursing association ▪ Pre-service and in-service training 	Injection providers (e.g., nurses)	✓ Proportion of health care facilities where used injection equipment can be observed in places where they expose health care workers to needlestick injuries

NATIONAL DRUG POLICY TO PREVENT INJECTION OVERUSE

<u>Objectives</u>	<u>Core interventions</u>	<u>Beneficiaries/ Target groups</u>	<u>Indicators</u>
Reduce injection overuse	Promote oral medication <ul style="list-style-type: none"> ▪ Education materials ▪ Mass media 	Patients	✓ Proportion of the population reporting a preference for injections in the case of fever
	Reduce prescription of injectable medications <ul style="list-style-type: none"> ▪ Standard treatment guidelines ▪ Policy statement from medical association ▪ Interactional group discussions ▪ Reduce financial incentive to provide injections 	Injection prescribers (e.g., physicians, medical assistants, including in the private sector)	✓ Proportion of prescriptions including at least one injection
	Reduce access to injectable medications <ul style="list-style-type: none"> ▪ Remove unnecessary injectable medications from the essential drug list 	Health facilities, pharmacies and depots.	✓ Number of injectable medications on the essential drug list

2. EQUIPMENT AND SUPPLIES

ESSENTIAL DRUG SYSTEM SUPPLIES TO MAKE SYRINGES AND SHARPS BOXES AVAILABLE IN EVERY HEALTH CARE FACILITY

<u>Objectives</u>	<u>Core interventions</u>	<u>Beneficiaries/ Target groups</u>	<u>Indicators</u>
Ensure universal access to safe injection equipment and safety boxes	<p>Deliver injectable medications with matching quantities of essential equipment and supplies when procuring and distributing essential drugs</p> <ul style="list-style-type: none"> ▪ Procure syringes, needles, diluents and safety boxes for the collection of sharps ▪ Strengthen the national regulatory authority to ensure the quality of injection equipment 	Public and private health care facilities	✓ Proportion of health care facilities with stocks of single use injection equipment (in the facility or in a nearby public or community pharmacy)

IMMUNIZATION AND FAMILY PLANNING TO DELIVER INJECTABLE SUBSTANCES WITH AUTO-DISABLE SYRINGES AND SHARPS BOXES

<u>Objectives</u>	<u>Core interventions</u>	<u>Beneficiaries/ Target groups</u>	<u>Indicators</u>
Make all injectable vaccines and contraceptives available with matching qualities of injection equipment and safety boxes	<p>“Bundle” injectable vaccines and contraceptives procured by donors and lenders with essential equipment and supplies, including:</p> <ul style="list-style-type: none"> ▪ Auto-disable syringes and needles ▪ Diluents ▪ Safety boxes 	Immunization and family planning services	✓ Immunization and family planning services supplying auto-disable syringes and needles in quantities matching supplies of injectable vaccines and contraceptives of services

3. SHARPS WASTE MANAGEMENT

HEALTH CARE SYSTEM TO MANAGE SHARPS WASTE

<u>Objectives</u>	<u>Core interventions</u>	<u>Beneficiaries/ Target groups</u>	<u>Indicators</u>
Integrate sharps waste management into a comprehensive national health care waste management plan	<p>National health care waste management plan</p> <ul style="list-style-type: none"> ▪ National policy with regulatory framework ▪ Plan from waste production to disposal ▪ Training at all levels ▪ Procurement of waste treatment options 	<ul style="list-style-type: none"> ▪ Health care facilities ▪ Injection providers ▪ Communities 	✓ Proportion of health care facilities where used injection equipment can be seen in the surrounding environment

REFERENCES

- 1 Simonsen L, Kane A, Lloyd J, Zaffran M, Kane M. Unsafe injections in the developing world and transmission of blood-borne pathogens. Bull WHO 1999;**77**:789-800.
- 2 Quick JD, Rankin JR, Laing RO et al. (Editors). Managing Drug Supply, 1st edn 1997; pp. 430-49. West Hartford: Kumarian Press.
- 3 Kane A, Lloyd J, Zaffran M, Simonsen L, Kane M. Transmission of hepatitis B, hepatitis C and human immunodeficiency viruses through unsafe injections in the developing world: model-based regional estimates. Bull WHO 1999;**77**: 801-7.
- 4 Miller M and Pisani E. The cost of unsafe injections. Bull WHO 1999;**77**:808-11.
- 5 "Aide Memoire" for National Safe and Appropriate use of Injections Strategies. WHO document, Department of Blood Safety and Clinical Technology, 2000. Document available at www.injectionsafety.org.
- 6 CDC. Framework for program evaluation in public health. MMWR 1999;**48**: RR-11.
- 7 WHO-UNICEF-UNFPA. Joint statement on the use of auto-disable syringes in immunization services. WHO/V&B/99.25. Document available at www.who.int/vaccines
- 8 WHO, action programme on essential drugs. Indicators for monitoring national drug policies. WHO/DAP/94.12.
- 9 WHO. How to investigate drug use in health facilities. WHO/DAP/93.1.
- 10 WHO: Tool for the assessment of injection safety. WHO/V&B/01.30, August 2001.
- 11 Reeler AV: Anthropological perspective on injections: a review. Bull WHO 2000;**78**:135-43.
- 12 WHO. Tool to identify the determinants of poor and good injection practices. Draft for field testing. October 2000. Department of Blood Safety and Clinical Technology. Available from www.injectionsafety.org.
- 13 WHO. Guide to good prescribing. WHO/DAP/94.11.
- 14 Birungi H. Injection use and practices in Uganda. WHO/DAP94.18.
- 15 Van Staa A, Hardon A. Injection practices in the developing world: A comparative review of field studies in Uganda and Indonesia. WHO/DAP/96.4
- 16 WHO. Report of two informal workshops on injection practices research. WHO/DAP/92.9.
- 17 WHO. How to investigate drug use in communities. WHO/DAP/92.3.
- 18 WHO. How do I become an injection safety advocate? Initial draft, August 2001, available from www.injectionsafety.org.
- 19 Best infection control practices for skin-piercing intradermal, subcutaneous and intramuscular needle injections. WHO/BCT/DCT 01.02.
- 20 WHO. "Aide Memoire" for a National Health-care Waste Management Strategy. WHO document, Department of Protection of the Human Environment, 2000. Document available at www.healthcarewaste.org.