



A GUIDE FOR SUPERVISING INJECTIONS



Final version – 12 Feb 2004

ACKNOWLEDGEMENTS	3
OBJECTIVES	4
BACKGROUND	4
The high cost of injection overuse and unsafe practices	4
Limitations.....	4
How supervisors can improve injection safety.....	4
Overview.....	5
Timeline.....	5
STEP 1: ASSESS PRACTICES, FACILITIES AND SUPPLIES	6
Getting started	6
The assessment	6
Table 1: Dangerous practices that supervisors should interrupt.....	7
Table 2: One page supportive supervision checklist.....	8
STEP 2: IDENTIFY STRENGTHS AND WEAKNESSES, SET PRIORITIES	9
Simple method to help select priorities	9
Table 3: Selecting priorities from a list of problems (with examples).....	9
STEP 3: PROVIDE FEEDBACK AND PREPARE A PLAN OF ACTION.....	10
Strengthen good practice.....	10
Meet with staff to discuss why problems are occurring	10
Develop a plan of action.....	11
Record the details of the plan to ensure accountability	11
A final suggestion: Role-plays.....	12
<u>APPENDIX A: BEST INFECTION CONTROL PRACTICES FOR SKIN-PIERCING INTRADERMAL, SUBCUTANEOUS AND INTRAMUSCULAR NEEDLE INJECTIONS</u>	13
APPENDIX B: SELECTED REFERENCES	16

ACKNOWLEDGEMENTS

WHO thanks all who provided feedback to aid in the development of this guide. These contributors include Mary Catlin, Selma Khamassi, Rebecca Fields, Jules Millogo, Sophie Logez, Thomas O'Connell, Susan Wilburn, Tracy Goodman, Maha Talaat, Alison Delo, Asif Ahmadov and Virginia O'Dell. Special thanks go to members of the Ministry of Health, BASICS and WHO in Guinea who field-tested the guide.

OBJECTIVES

The objective of this document is to provide a guide for supervisors and trainers to:

1. Observe injection practices;
2. Provide feedback about safe and unsafe practices;
3. Help supervisors resolve problems contributing to unsafe injections.

BACKGROUND

THE HIGH COST OF INJECTION OVERUSE AND UNSAFE PRACTICES

In some countries nearly 50% of the injections may be given with used, contaminated injection equipment. In addition, many of the injections are not only unsafe, but are also unnecessary. Instead of curing ill patients, unnecessary and unsafe injections sicken millions of persons every year.

Unsafe injections can transmit the hepatitis B virus (HBV), the hepatitis C virus (HCV) and the human immunodeficiency virus (HIV). WHO estimates that annually, unsafe injections account for 33% of new HBV infections, 40% of new HCV infections and 5% of new HIV infections. This means that improvements in injection safety could prevent 22 million people from acquiring hepatitis B virus infections, 2 million people from hepatitis C virus infections and 260 000 from HIV infections each year.

LIMITATIONS

This guide discusses how supervisors can improve the practices of persons who give injections. If the problems identified require improved management of supplies, changing the indications for the use of injections or modifying how waste is managed, supervisors may need to refer to additional resources listed in Appendix B.

HOW SUPERVISORS CAN IMPROVE INJECTION SAFETY

HELP TO MAKE APPROPRIATE EQUIPMENT AND SUPPLIES AVAILABLE

A sterile syringe and needle are needed for every injection and for the reconstitution of every vial. Supervisors can help health centres to make realistic forecasts of how many supplies will be needed. They can put a system in place to check supply orders when they go out and come in to ensure that the quantity of supplies—syringes for mixing and for injection and the number of safety boxes—corresponds to the number of doses of vaccine or medication. Supervisors can help resolve issues between different levels of the health system, for example when health centres order but do not receive stock. Supervisors can ensure that new and continuing staff learn how to keep stock records and store supplies so that an accurate stock record is readily available.

ENSURE THAT INFORMATION ABOUT EXPECTED PRACTICES IS DISTRIBUTED AND

UNDERSTOOD

Supervisors can help health workers understand that some injection practices put patients or themselves at risk. They can verify that policies, procedures and other communications about injection safety have arrived at the centre and that the health staff understand what steps they should take to protect themselves and their patients.

HELP IMPLEMENT SYSTEMS TO MANAGE SHARPS WASTE

Waste management systems that remove used syringes and needles from public access reduce the reuse and sale of contaminated equipment. Good waste management also help prevent needle-stick injuries. Supervisors play a critical role in maintaining effective waste systems by:

- Ensuring that local budgets include resources for essential facilities and supplies;
- Providing technical advice to help staff choose the best available options;
- Ensuring that written procedures are present;
- Monitoring waste disposal practices.

OVERVIEW

This handbook suggests three-steps to identify problems and to implement specific actions to make injections safer. The intent is to strengthen existing good practices and not to blame or criticize health care workers.

STEP 1: ASSESS PRACTICES, FACILITIES, SUPPLIES

First, in Step 1, the supervisor observes:

- Injection practices;
- The quantities of available equipment and supplies;
- Written references and the awareness of injection standards by staff;
- How workers dispose of and destroy sharps.

Then the supervisor notes observations on a checklist.

STEP 2: IDENTIFY STRENGTHS AND WEAKNESSES TO SET PRIORITIES

In Step 2, the supervisor summarizes a list of safe practices and unsafe practices that were observed. Step 2 also includes an aid to choose one or two priority problems. Appendix A is given as a reference for good injection practices recommended by WHO.

STEP 3: PROVIDE FEEDBACK AND PREPARE A PLAN OF ACTION

If supervisors give feedback to praise the safe practices they have observed, health care workers may be more willing to discuss factors contributing to unsafe practices. This key third step provides feedback to reinforce good practices and to help correct poor ones. Step 3 guides the team to develop a plan and also suggests practical supervisory techniques.

TIMELINE

In a busy clinic, observations, inspections and feedback can be done in about 1-2 hours, but it can take longer if one has to wait to observe injections. To develop a plan of action requires about 1 hour when led by experienced facilitator and 4 hours when led by a person without experience. Overall, half a day to one day should be sufficient for a primary care facility.

Step 1

STEP 1: ASSESS PRACTICES, FACILITIES AND SUPPLIES

GETTING STARTED

To get started, introduce yourself to the person in charge and ask if he or she could introduce you to the health care workers involved in providing injections.

Explain to the persons you meet that you would like to help them improve the safety of the injections they give. Remind them that no person will be criticized or blamed and that you would appreciate their help to identify ways to make injections safer.

To organize your visit, explain that you would like to:

- Find out where and in how many rooms injections are given in the facility; ask what programmes use needles or other sharps. Tell the person in charge which places you would like to visit. On a first visit, it is a good idea to visit all places where injections are provided. In a large facility or in a hospital, ask for a representative from the different services to accompany the observations in one or two services or wards. Later, leave a blank copy of the checklist for the charge nurses or chiefs to use on their ward.
- Observe at least two persons giving injections, both vaccination and the injection of medication if possible.
- Speak with the person who supervises injections given in this facility.
- Visit the places where injection equipment is stored and view the stock records.
- See the facility's current copy of the national safe injection policy and the medical waste policy. Explain that you would like to ask for this now to allow time to look for it.
- Quickly tour the facility and the outside grounds, including where health care waste is stored and buried (or destroyed) if this is done on-site.
- At the end of your visit, mention that you would like to meet with the team of persons who make injections possible: persons who order and manage stock, persons who administer injections, persons who supervise injections, persons who handle the medical waste procedures, etc. The purpose of the meeting will be to discuss the good practices seen, select priority problems and prepare a plan of action.

After the visit, remember to thank health care workers for their participation. Their help in uncovering problems and solutions is vital.

THE ASSESSMENT

Use the injection safety checklist to assess equipment and supplies, observe injection practices, and interview two or more injection providers and their supervisors (if applicable). If possible, try to observe injections given for treatment as well as for immunizations. Be aware that distinct problems and solutions may exist for different types of injections.

Complete the checklist without commenting on what you see. In this way, team members may be more likely to show their usual practices. However, if you observe potentially dangerous behaviours, you should tactfully stop them immediately. Examples of these practices are shown in Table 1, which precedes the checklist.

TABLE 1: DANGEROUS PRACTICES THAT SUPERVISORS SHOULD INTERRUPT

Problem observed:	Immediate action to take:
<ul style="list-style-type: none"> ▪ Reuse of syringe or needle in the absence of sterilization 	<ul style="list-style-type: none"> ▪ If no sterile injection equipment is present, stop injections
<ul style="list-style-type: none"> ▪ Reuse of mixing syringes in the absence of sterilization 	<ul style="list-style-type: none"> ▪ Discard syringe and all vials reconstituted with it
<ul style="list-style-type: none"> ▪ Sterilization of single use injection equipment 	<ul style="list-style-type: none"> ▪ Discard used single use injection equipment
<ul style="list-style-type: none"> ▪ Boiling injection equipment 	<ul style="list-style-type: none"> ▪ If no sterile injection equipment is present, stop injections elsewhere in the facility
<ul style="list-style-type: none"> ▪ Vials of medication or vaccines* without preservative that have been opened for more than six hours (e.g., measles, yellow fever vaccine, BCG vaccine) 	<ul style="list-style-type: none"> ▪ Discard all vials without preservatives that have been reconstituted or open longer than six hours
<ul style="list-style-type: none"> ▪ IV fluid used to reconstitute medication 	<ul style="list-style-type: none"> ▪ Discard opened IV fluid and medication reconstituted with it (small vials of sterile water or sterile normal saline per manufacturer's instructions should be used)
<ul style="list-style-type: none"> ▪ Use of methanol or methyl alcohol to wash hands, to wipe injection sites or as antiseptics 	<ul style="list-style-type: none"> ▪ Remove methanol from use
<ul style="list-style-type: none"> ▪ Reuse of equipment without cleaning, use of TST spots or supervised sterilization 	<ul style="list-style-type: none"> ▪ Stop injections unless sterile equipment is available elsewhere in the facility
<ul style="list-style-type: none"> ▪ Use of vaccine with a vaccine vial monitor (VVM) with the square darker than the circle or past the expiry date 	<ul style="list-style-type: none"> ▪ Discard the vaccine
<ul style="list-style-type: none"> ▪ Opening a vial of diluent, using a few cc and saving the open vial of diluent for future use 	<ul style="list-style-type: none"> ▪ Discard any opened vials of diluent. Vials without self-sealing rubber septum are most dangerous because they have large openings

Warning!: Halting a practice is not sufficient to prevent its recurrence. If these dangerous practices are seen, select them as priority problems. Follow the instructions in Step 3 (Page 10) to develop an action plan to systematically eliminate the practice.

* One way to help workers remember which vaccines must be discarded is that currently the live virus EPI vaccines that need to be reconstituted do not have preservatives that can kill contaminating pathogens. Multi-dose vials of diluent for freeze-dried Menomune® A/C/Y/W-135 have thiomersal; but single dose vials of diluent do not.

TABLE 2: ONE PAGE SUPPORTIVE SUPERVISION CHECKLIST

One page injection safety supportive supervision checklist									
In the chief's office	Visit the person in charge and explain the purpose of the visit; identify all sites that injections or sharps are used; choose the services or sites to visit; ask the person in charge to introduce you.	Write the name of the site where injections were observed below. For example: EPI, TB, dentist, emergency lab, family planning...							
	Ask the number of target BCG and DTP injections for one month to help estimate the quantity needed for adequate stocks BCG _____ DTP _____	Other, non-EPI injections							
		EPI							
		Circle Yes or No (or leave blank if not observed)							
In the injection administration areas	Ask to observe injections:								
	Is there a sharps container where the injections are given?	Yes	No	Yes	No	Yes	No	Yes	No
	Are fingers protected by a rigid material or gauze when glass ampoules are opened?	Yes	No	Yes	No	Yes	No	Yes	No
	Are sharps containers discarded before they are full? (Not overflowing)	Yes	No	Yes	No	Yes	No	Yes	No
	Are the safety boxes of good quality (without leaks and not pierced by needles)?	Yes	No	Yes	No	Yes	No	Yes	No
	Are all needles placed immediately in sharps containers? Circle "no" if used needles are seen in open garbage containers, on tables or other places inside the facility that put staff at risk of needle-sticks.	Yes	No	Yes	No	Yes	No	Yes	No
	Are full sharps boxes closed and stored in a locked area inaccessible to the public?	Yes	No	Yes	No	Yes	No	Yes	No
	Are injections prepared on a dry "clean" area where blood, specimens, used bandages, or soiled material are never placed?	Yes	No	Yes	No	Yes	No	Yes	No
	Is a sterile single use syringe and needle taken from a sterile package for each injection?	Yes	No	Yes	No	Yes	No	Yes	No
	Is the needle removed from the vial between each injection?	Yes	No	Yes	No	Yes	No	Yes	No
	Is the vial reconstituted with an appropriate diluent?	Yes	No	Yes	No	Yes	No	Yes	No
	Is reconstitution syringe sterile and discarded after one use?	Yes	No	Yes	No	Yes	No	Yes	No
	If present, is the inner square of the Vaccine Vial Monitor (VVM) lighter than the outer circle?	Yes	No	Yes	No	Yes	No	Yes	No
	Is the dose correct? Syringe not over or under filled, the correct number of drops given?	Yes	No	Yes	No	Yes	No	Yes	No
Are vials of reconstituted BCG, Measles, Yellow Fever and other preservative-free injectables discarded within 6 hours?	Yes	No	Yes	No	Yes	No	Yes	No	
Is cotton stored dry, without being left in potentially contaminated solutions?	Yes	No	Yes	No	Yes	No	Yes	No	
Is dirty skin cleaned with plain water?	Yes	No	Yes	No	Yes	No	Yes	No	
Do health workers avoid touching the injection site or wash their hands if in contact with blood?	Yes	No	Yes	No	Yes	No	Yes	No	
Is the syringe discarded without recapping? <i>Wait until patients leave or ask to speak in private</i>	Yes	No	Yes	No	Yes	No	Yes	No	
In private	In private, ask the injector, "Have you had a needle-stick in the last three months?"	Yes	No	Yes	No	Yes	No	Yes	No
	Can you tell me the names of diseases that are transmitted to health workers and patients by unsafe injections? <i>(Circle the answers if the worker mentions them without hints.)</i>	HBV		HBV		HBV		HBV	
		HCV		HCV		HCV		HCV	
With the supervisor	<i>Thank the health worker and ask to speak with the person who supervises those who give injections.</i>	HIV		HIV		HIV		HIV	
	Can you show me the national injection safety policy?			Yes	No				
In the stock room	Can you show me the waste disposal policy with procedures?			Yes	No				
	Ask to visit the stock room:								
	Is there 1 month's stock of single-use or AD BCG syringes?	Yes	No	Yes	No	Yes	No	Yes	No
Are there enough single use and AD syringes in stock for 1 month? (At least 5 times the target number of DTP-3 injections)	Yes	No	Yes	No	Yes	No	Yes	No	
Are there at least 10 safety boxes in stock and in use?	Yes	No	Yes	No	Yes	No	Yes	No	
Ask to visit outside the facility, where closed needle boxes are stored and destroyed (if done on site).									
Outside the facility	Absence of used needles/ syringes around the facility?	Yes	No	Yes	No	Yes	No	Yes	No
	How does the centre destroy syringes? (Circle those that apply)	_ Incinerator on site (>800 C) _ Buried _ Dumped in a latrine _ Burned in an enclosed container or space _ Transported off-site to un-controlled location _ Transported to an incinerator off site Other: _____							

Step 2

STEP 2: IDENTIFY STRENGTHS AND WEAKNESSES, SET PRIORITIES

Review the injection practices you observed. Note the good practices to discuss them later with the health care workers. If any practices were noticed from Table 1 that pose an immediate danger to patients or staff, list these practices as priority problems on the action plan.

Additional priorities can be selected by you, the supervisor or preferably in discussion with the team from the facility. Whether selected by one person or by a group, continue to review other observations until you have at least one or two priorities. If necessary, review appendix A, the “Best practices for intradermal, subcutaneous and intramuscular injections” for a list of recommended practices.

Select one or two priority problems by looking for dangerous, common practices that can be resolved locally in ways acceptable to the community. Focusing on a few priority problems is a more successful approach than trying to change many things at once. One way to help select priorities from a list of problems is shown below.

SIMPLE METHOD TO HELP SELECT PRIORITIES

Copy the problems found onto a blackboard or a separate page such as the one suggested below. These are the items from the checklist with “no” for a response. Dangerous practices that pose an immediate danger should be given four “Xs” in the “Danger” column. Place a single “X” in the other columns if the problem is common, an “X” if a local solution is possible with available resources and an “X” if a solution is acceptable to patients and the community. Write the total number of “Xs” in the last column. Problems that have the most “Xs” should be considered as priority items.

TABLE 3: SELECTING PRIORITIES FROM A LIST OF PROBLEMS (WITH EXAMPLES)

Date and problem	Does the practice immediately put patients at risk? (See Table 1)	Is the problem common?	Is a local solution possible to the problem?	Is the solution acceptable to patients and community?	Total
6/8/03: Non-sterile mixing syringes reused in tuberculosis clinic	XXXX		X	X	6
7/8/03: Injections prepared on a table near food			X	X	2
8/8/03: Sharps discarded in plastic buckets		X	X	X	3
...					

Step 3

STEP 3: PROVIDE FEEDBACK AND PREPARE A PLAN OF ACTION

STRENGTHEN GOOD PRACTICE

Call a meeting with health care workers who give injections to review the good practices observed at the health centre while completing the checklist, pointing out that such good practices prevent diseases and save lives. On subsequent visits, praise progress made on problems. Practices improve when good performance is rewarded through praise and other incentives.

MEET WITH STAFF TO DISCUSS WHY PROBLEMS ARE OCCURRING

Discuss the contributing factors with health care workers. Plan to spend about an hour to analyse a problem and create a plan. Short sessions that focus on one to two issues are more effective than a lengthy one that tries to cover all issues. Also, people are more likely to change their behaviours when they learn through participation rather than from passive listening.

1. Have the team write a clear, detailed, specific statement of the problem they are trying to correct. For example: "Staff are putting needles in metal dishes instead of immediately disposing of used syringes and needles in a safety box available in the stock room".
2. Help the group identify the main causes of the priority problem. Is the problem occurring because of the management of supplies, personnel or supervision? For example, does the problem occur because an inadequate stock of safety boxes was ordered (i.e., when ordering stock)? On receipt of stock? During storage? During use of stock? Would it be helped by orientation of new staff? Training? Communication of expected action? Supervision?
 - ✓ Write responses down on a large piece of paper or writing board;
 - ✓ Some people use the "But Why" technique. Ask "but why" as each cause is suggested, until the team feels it has uncovered all the factors that contribute to making the problem. It is important for everyone to feel his or her ideas have been considered;
 - ✓ Help the group to agree on a final list of those identified causes that the team believes it can change with resources available.
3. Now, lead a brainstorming session to generate solutions to each of the main causes the team feels they could realistically work on. Remind participants not to make criticisms or judgements about the ideas offered.
 - ✓ Encourage staff to explore new ideas. Excellent solutions can come from ideas that initially seem unusual, unworkable or different.
 - ✓ As you discuss problems in greater detail, you may need to restate the problem to make it more precise. This is an excellent sign that the team is exploring all the important issues.

- ✓ Focus on solutions that can be achieved with available resources. For example, in the event of a stock out of safety boxes, staff might be able to make their own safety boxes from leak- and puncture-proof containers (e.g., bleach bottles). The centre can decide to save these for use in case of a shortage of regular sharps containers.

DEVELOP A PLAN OF ACTION

Keep in mind that many factors may contribute to problems of injection safety. Have the multidisciplinary health care team try to address as many of the causes as possible. Explain to the staff that improving injection safety is a process. No single action, done one time, will resolve chronic problems. It is more typical that the solution will have several causes and thus need several actions repeated over time. For example if needles are commonly found in the garbage despite a supply of safety boxes, the plan may require all of the actions below:

- Reviewing written procedures to place all sharps in safety boxes with new and continuing staff.
- Placing posters at the workplace reminding staff not to place needles in garbage.
- Delegating responsibility for each person to set up a safety box at their work site prior to starting injections.
- Organizing monthly supervision to see if needles are visible in the trash, with progress reported at staff meetings.
- Authorizing each injection provider to open a new safety box and close and remove boxes before completely full.
- Establishing a system to routinely verify that orders of syringes are accompanied by a simultaneous order of safety boxes.
- Authorizing staff to improvise with self-made leak-proof, puncture-proof containers after notifying the on-site supervision of a shortage of needle containers.

Note that the plan should explain how new staff and continuing staff will be oriented and supervised. A systematic approach is more comprehensive and more successful than a single announcement to staff not to discard sharps in the waste.

RECORD THE DETAILS OF THE PLAN TO ENSURE ACCOUNTABILITY

When staff members think that they understand the factors contributing to the problem and the actions to take, help them record how they will resolve the problem. So that progress can be tracked. Specific actions are noted. For example, if the problem is that workers are giving children ineffective vaccine (with vaccine vial monitors (VVM) that indicate excessive heat exposure), give specific instructions about the steps to take. Rather than writing "staff should verify the VVM". Write; "the EPI worker on duty should check the VVM when they pick up stock, when they take vaccine from the freezer and before giving the vaccine to a child. If the inner square of the VVM is lighter than the surrounding circle, take the vaccine for use. If not, the vaccine should be returned to EPI." These specific instructions indicate who, what, when and how the action should be done. A clear action plan does not rely on past training or knowledge: these may vary among staff.

A format for writing the plan is shown below.

- *Objective:* Write a specific and measurable objective for each main cause of the problem. This is what the team wants to accomplish.
- *Action:* Name the specific steps to be taken.
- *How:* List the human and other resources needed.
- *Who:* Write the name of the people responsible for each act.
- *When:* Write a time when these actions should be started and completed.
- *Indicator:* Note how can the team monitor its progress? It may be possible to use the same indicator on the checklist and see if the problem is continuing or not.
- *Accountability:* How will the team ensure their commitment to adopting the new practice?

Here is an example:

- *Objective:* 100% of sharps placed into safety boxes
- *Action:* All injection providers make sure they have a safety box in their workstation before giving injections. They place all needles and syringes in the safety box immediately after use without recapping. They close the box before it is completely full and open a new one.
- *Who and How:* District Medical and Nursing officers will ensure that each centre has stock on hand with 10 boxes in reserve. They will assign a District Health Team member to check all injection sites daily for the presence of safety boxes that are not overfilled.
- *When:* 1) Daily checks commence immediately; 2) Orders for safety boxes sent quarterly by 5th of each month, with a buffer stock of 10 boxes; and 3) All injection providers are to attend an on-the-job demonstration of safe practices on 21 May.
- *Indicator:* No used sharps observed outside of approved sharps containers.
- *Responsibilities:* District Medical Officer to supervise progress; District Nursing Officer to document daily checks on availability and use of sharps boxes; injection providers to check that boxes are available at their work site, and to close boxes and open new ones before they are completely full.

A FINAL SUGGESTION: ROLE-PLAYS

One step in the action plan might be to have one health care worker role play explaining the desired safe practice to a "new health worker". Role-playing can help to modify behaviour in two ways. First, the team members have to identify and demonstrate all the key steps. Secondly, they have the opportunity to practice mentoring and coaching skills. That way, when a new member really does join the team, existing team members will be more comfortable teaching the new person safe injection practices.

APPENDIX A: BEST INFECTION CONTROL PRACTICES FOR SKIN-PIERCING INTRADERMAL, SUBCUTANEOUS AND INTRAMUSCULAR NEEDLE INJECTIONS

A safe injection does not harm the recipient, does not expose the provider to any avoidable risk, and does not result in any waste that is dangerous for other people

Eliminating unnecessary injections is the highest priority to prevent injection-associated infections. When injections are medically indicated, they should be administered safely. These best practices are measures that have been determined through scientific evidence or expert consensus to protect patients, providers and communities most effectively.

A. USE STERILE INJECTION EQUIPMENT

- A-1) Use a sterile syringe and needle for each injection, and to reconstitute each unit of medication.



- A-2) Ideally, use a new, single use disposable syringe and needle.



- A-3) Inspect packaging for breaches in barrier integrity. Discard a needle or syringe if the package has been punctured, torn or damaged by exposure to moisture.



- A-4) If single use syringes and needles are unavailable, use equipment designed for steam sterilization. Sterilize equipment according to WHO recommendations and document the quality of the sterilization process using Time, Steam, and Temperature (TST) spot indicators.



B. PREVENT CONTAMINATION OF INJECTION EQUIPMENT AND MEDICATION

- B-1) Prepare each injection in a clean designated area, where blood or body fluid contamination is unlikely.



- B-2) Use single-dose vials rather than multi-dose vials.



- B-3) If multi-dose vials must be used, always pierce the septum with a sterile needle. Avoid leaving a needle in place in the stopper of the vial.



- B-4) Select pop-open ampoules rather than ampoules that require use of a metal file to open.



B-5) If using an ampoule that requires a metal file to open, protect fingers with a clean barrier (e.g., small gauze pad) when opening the ampoule.



B-6) Inspect for and discard medications with visible contamination or breaches of integrity (e.g., cracks, leaks).



B-7) Follow product-specific recommendations for use, storage and handling.



B-8) Discard a needle that has touched any non-sterile surface



C. PREVENT NEEDLE-STICK INJURIES TO THE PROVIDER

C-1) Anticipate and take measures to prevent sudden patient movement during and after injection.



C-2) Avoid recapping and other hand manipulations of needles. If recapping is necessary, use a single-handed scoop technique.



C-3) Collect used syringes and needles at the point of use in an enclosed sharps container that is puncture- and leak-proof and that is sealed before completely full.



D. PREVENT ACCESS TO USED NEEDLES

D-1) Seal sharps containers for transport to a secure area in preparation for disposal. After dosing and sealing sharps containers, do not open, empty, reuse, or sell them.



D-2) Manage sharps waste in an efficient, safe and environment-friendly way to protect people from voluntary and accidental exposure to used injection equipment.



E OTHER PRACTICE ISSUES

E-1) Engineered technology. Whenever possible, use devices designed to prevent needle-stick injury that have been shown to be effective for patients and providers. Auto-disable (AD) syringes are increasingly available to prevent reuse of injection equipment in selected settings, including immunization services.

E-2) Provider's hand hygiene and skin integrity. Perform hand hygiene (i.e., wash or disinfect hands) before preparing injection material and giving injections. The need for hand hygiene between each injection will vary based on the setting and whether there was contact with soil, blood or body fluids. Avoid giving injections if skin integrity is compromised by local infection or other skin condition (e.g., weeping dermatitis). Cover any small cuts.



E-3) Gloves. Gloves are not needed for injections. Single use gloves may be indicated if excessive bleeding is anticipated.

E-4) Swabbing of vial tops or ampoules. Swabbing of clean vial tops or ampoules with an antiseptic or disinfectant is unnecessary. If swabbing with an antiseptic is selected for use, use a clean, single use swab and maintain product specific recommended contact time. Do not use cotton balls stored wet in a multi-use container.



E-5) Skin preparation before injection. Wash skin that is visibly soiled or dirty. Swabbing of the clean skin before giving an injection is unnecessary. If swabbing with an antiseptic is selected for use, use a clean, single use swab and maintain product specific recommended contact time. Do not use cotton balls stored wet in a multi-use container.



For additional details, see the full best practices document reference. *

* Hutin YJF, Hauri AM, Chiarello L, Catlin M, Stilwell B, Ghebrehwet T, Garner J and the members of the injection safety best practices development group. Best infection control practices for intradermal, subcutaneous and intramuscular needle injections. Bull World Health Organ 2003; 81:491-500.

APPENDIX B: SELECTED REFERENCES

1. Managing an injection safety policy. Draft 6 for field testing. WHO Department of Blood Safety and Clinical Technology.
2. Procuring Safe Single use Injection Equipment and Safety Boxes. Draft for field testing. The WHO Department of Blood Safety and Clinical Technology.
3. Prüss, A and Townsend WK. The Management of waste from health-care activities. WHO/EOS/98.6. World Health Organization. Geneva 1999.
4. Hutin YJF, Hauri AM, Chiarello L, Catlin M, Stilwell B, Ghebrehiwet T Garner J and the members of the injection safety best practices development group. Best infection control practices for intradermal, subcutaneous and intramuscular needle injections. Bull World Health Organ 2003; 81:491-500.
5. McMahon R, Barton E, Piot M: "On being in charge". A guide for middle-level management in primary health care. WHO Geneva 1980.

Also see the Internet site of the Safe Injection Global Network (SIGN) at www.injectionsafety.org