



Federal Ministry of Health National Injection Safety Forum

Standards for Universal Precautions and Health Care Waste Management practices

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Making Medical Injections Safer

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INTRODUCTION

Administration of injections is one of the most common health care procedures. According to WHO, a safe injection is one that is given using appropriate equipment and that does not harm the recipient, does not expose the provider to any avoidable risks and does not result in waste that is dangerous to other people.

In Nigeria, there has been considerable improvement in the area of immunization services since the introduction of auto-disable syringes in 2001. However, poor injection and sharp waste disposal practices for other preventive and curative services pose an avoidable risk of transmission of deadly diseases such as HIV/AIDS, Hepatitis B and Hepatitis C to the consumers, the health care providers and the whole community.

According to a national cross-sectional survey conducted in July/August 2004 among 80 health facilities, about 62.5% of the health facilities were observed not to have safety boxes in use and 23.8% had no injection rooms, exposing a large number of people to unsafe injection practices. These poor practices were mostly observed in curative services. The survey confirmed that the introduction of safety boxes and auto-disable syringes has greatly improved injection practices in the area of immunization.

Injections are over-used, with an average of 4.9 injections per person per year and the great majority of these injections are unnecessary and could have been replaced by oral drugs. Furthermore clients receive nearly as many injections in the informal health sector or in the community where the risk of re-use of syringes and needles without sterilization may be higher than in supervised formal settings.

Health workers are exposed to avoidable risk: more than 75.7% of the providers were observed in two-handed recapping after injections (therapeutic and immunization), denoting risk of blood pathogen virus infection. Post exposure prophylaxis to abort HIV infection after needle stick injuries was not offered to injured providers 43/46 (93.5%) at the time of above-mentioned survey.

The community is also exposed to hazardous sharp waste. Health facilities were not equipped with proper disposal facilities. In n 65% of the health facilities visited, that had sharps and other wastes on their premises or in other unsupervised areas, exposing the community to needle stick injuries.

In order to minimize the risk of transmission of HIV/AIDS and other blood borne pathogens through unsafe injections, the Federal Ministry of Health has phased out, use of sterilizable injection equipment. Furthermore, a National injection Safety and Health Care Waste Management Policy was developed to address the issue in a way broader than immunization services. The following norms and standards were developed based on the key elements of this policy. The standards are developed for both public and private practitioners and the community.

1. Standards and Norms for Federal level

The Federal Ministry of Health and Technical Working Group of MMIS should ensure that the following standards and norms are maintained:

1.1 Capacity building, training and supervision

- Copies of the present norms and standards are available at all levels
- Each State has enough personnel trained in forecasting, procurement and distribution of injection and health care waste management supplies.
- On-the-job training and supervision of safe injection practices and appropriate healthcare waste management and the changes are included in their curricula.
- Feedback is given and received by the States biannually.

1.2 Equipment and Supplies

- All equipment used in the country including the Public, Private and non-governmental health facilities meet the recommended standards.
- Adequate injection material supplies are made available at the Federal and State levels.
- Matching quantities of safety materials such as syringes and water resistant puncture proof safety boxes are systematically ordered for; for all injections including immunization, curative and reproductive health services.
- The different departments plan and lobby for enough budgetary allocation for injection materials for all programs including immunization, curative and reproductive health services.
- Relevant departments and programs put in place effective systems for forecasting, procuring, distributing, monitoring and supervision of the way injection equipment and supplies are handled.

1.3 Communication and Behavioural Change

- All health information from various programs of the Ministry of Health address injection safety and Waste Management concerns, particular emphasis should be put on reducing unnecessary injections and promoting safe disposal of health care wastes.
- Advocacy for safe injection practices and appropriate waste management is conducted by - NGO's, cultural, religious and political leaders.
- Adequate IEC materials are available for the various levels.

- Incentive systems are developed to encourage service providers to adopt injection safety standards and guidelines.
- State and Local government areas health teams are provided with information on norms and standards for the appropriate waste management practices.
- Health care workers are trained on safe injection and waste management practices.

1.4 Health Care Waste management

- Waste management guidelines should be available at all levels in both the public and private sectors
- Waste disposal facilities should be constructed and accessible to all health care waste generators.

2. Standards and norms for State and LGA level

All Local Government Areas and district health management teams should ensure that the following standards and norms are maintained:

2.1 Capacity building, training and supervision

- Copies of the present norms and standards are available at all levels.
- Each local government area and district/health has enough personnel trained in forecasting, procurement and distribution of injection and health care waste management supplies.
- On-the-job (in-service) training and supervision of safe injection practices and appropriate health care waste management are regularly conducted in all health units whether public or private, government or non-government.
- Training institutions are updated on any new trends in infection control practices and included in their curricula
- Feedback is given to the State every four Months and timely accountability is received.
- An appropriate regulatory authority should be empowered to ensure strict compliance with procuring, distribution of equipment and supplies of injection devices.

2.2 Equipment and Supplies

- All equipment used in the health units including that in the non-governmental sector meets the recommended standards.
- Adequate injection material supplies are made available at all health units.
- Matching quantities of injection safety materials such as syringes and water resistant puncture proof safety boxes are systematically ordered for; for all injections including immunization, curative and reproductive health services.
- The different departments and programs plan and lobby for enough budgetary allocation for injection materials for all programs including immunization, curative and reproductive health services.
- Relevant departments and programs put in place effective systems for forecasting; procuring, distributing, monitoring and supervision of the way injection equipment and supplies are handled.

2.3 Communication and Behaviour Change

- All health information from the different programs of the State Ministries of Health address injection safety and waste management concerns. Particular

emphasis should be put on reducing unnecessary injections and promoting safe disposal of health care waste.

- Advocacy for safe injection practices and appropriate waste management is conducted by – NGOs, cultural, religious and political leaders
- Adequate Information Education and Communication materials are available for the different levels.
- Incentive systems are put in place to encourage service providers to adopt injection safety standards and guidelines.
- Infection control focal persons are regularly provided with information on norms and standards for the appropriate waste management practice
- Behavioural change is sought among practitioners and public to ensure proper waste management.
- Health care workers are trained on safe injection and appropriate waste management practices.

2.4 HealthCare Waste management

The Local Government Area should enforce waste management guidelines in both the public and private sectors and NGO Health facilities. The National/State committee at the Hospital on infectious disease control should ensure through capacity building, sensitization of the personnel and the public, monitoring and supervision that all health care wastes are managed up to the final disposal stage in a manner that does not expose the patients, the care provider and the community to any avoidable risk. In addition, waste disposal practices should be as environmentally friendly as possible.

The national policy on injection safety and health care waste management has recommended incinerators with high temperature as the preferred method of final waste disposal. The incinerators where available, should be regularly monitored for maintenance of appropriate temperatures.

Best practices and techniques should include innovation; waste minimization and pollution prevention i.e. appropriate procurement practices, waste segregation and utilization of available disposal technologies.

The State and local government Areas should observe the following norms for the procurement and distribution of waste management supplies:

- Procure materials that minimize waste generation and pollution
- Equipment and materials procured for waste management should be adequate, appropriate and of recommended specification
- Procurements should be accompanied by manuals where applicable
- Appropriate storage facilities to avoid damage and waste generation
- Waste management guidelines are available at all levels in both the public and private sectors.
- Waste disposal facilities should be constructed and accessible by all health care waste generators.

3. Standards for Health Facilities Level

Every Health facility should have an infection control focal person knowledgeable in safe injection administration and proper waste disposal practices. The unit should be able to forecast for adequate injection equipment and health care disposal supplies.

With the exception of immunization injections and other special programs, an injection should be given only when other forms of the same medication are not available or would not be appropriate for the condition of the patient. For instance, if a patient is vomiting, oral treatment is not recommended. Only health workers appropriately trained to give a safe injection are allowed to give injections. Patients that seek care in health units should be appropriately informed about who among the personnel is qualified to give injections. The personnel of the health facilities should educate/counsel clients on injection use, in particular they should promote the use of non-injectable drugs. Before giving any injection, the practitioner should prepare the patient for the injection, i.e., counselling on: site, type of drug, side effects, reassuring, positioning and cleaning of the appropriate site of injection.

If an injection is deemed necessary, the following standards should be observed.

3.1 For all injections, use sterile equipment

- Use a sterile syringe and needle. (Auto-disable syringes are mandatory for all immunization injection. For curative and other type of injection syringes with reuse prevention devices and syringes with safety features are recommended. Where these are not available, standard disposable syringes can be used.)
- Ensure that the syringe and needle are in a properly sealed pack.
- Reconstitute the drug for each injection separately using sterile equipment.

3.2 Preventing contamination of injection equipment

- Each injection should be prepared in a clean area designated for it.
- There should be a separate room for examination, treatment (including injection) and dressing.
- If possible use a single dose vial / ampoule
- Disposed medications that are visibly breached, contaminated, cracked or leaking.
- Dispose any needle that has been contaminated.

3.3 Protection of the provider

Before administering an injection or any skin piercing procedure ensure that the following precautions are observed depending on the type of procedure being done.

- Anticipate and prevent any sudden patient movement during the injection/procedure.
- Syringes should not be recapped at all.
- All used syringes and needles or any other sharps should be discarded in a secure sharps container and sealed at the point of use (sharps container should be readily available for use).
- Blunt suture needles should be used when tissue needs to be sewn namely when suturing low-destiny tissue such as muscle and connective tissue. The use of this needle is at the discretion of the surgeon/midwife, who should be well informed about the risks of using a non-blunted needle.
- Disposable gloves are essential to protect health workers from exposure to blood and other bodily fluids.
- Protective eyewear: eye shields, goggles, visors should be made available and used by workers anytime they work with blood that has a potential to spill or spatter. Laboratory workers and housekeeping staff, for example – should wear protective eyewear. Surgical staff should also strictly adhere to this recommendation.
- Surgical/disposable facemasks are necessary to protect the health care workers' oral and nasal mucous membranes from spatter if blood or body fluid is spilled.
- Overshoes protectors should be available to be worn in two instances. First, they should be included in a biohazard spill kit, in case blood/body fluid is spilled in the laboratory, labour suite or clinic – “surgical caps or hoods and/or shoe covers or boots shall be worn in instances when gross contamination can reasonably be anticipated.” Spilling blood/body fluids in any gross way would increase the worker's risk for exposure, and wearing protective footwear will minimize contact with the bodily fluid. The second is for resource-poor settings where people commonly wear sandals.
- Lab Coats/Gowns/Plastic aprons should be worn by staff whenever working with blood that has the potential to spill or splash. Typically, direct service providers will wear lab coats, while gowns or plastic aprons will be worn by lab and cleaning staff.

3.4 Standards for administering injections and other medical skin piercing procedures

- Prepare a well-laid up tray, which should have emergency drugs for management of possible drug reactions.
- Wash hands with soap and water. Alcohol can be used as a second step after soap and water except for NPI injections.
- Drip dry. Small paper towels or any other single use towels can be used and disposed of.
- Check for the integrity of the vial/ampoule for expiry dates, breach, leaks, and particles for any contamination.
- For medications that need to be reconstituted (powder forms) the drug should be reconstituted according to the manufacturer's instructions.

- Again, make sure it is the right patient, right drug, right dose and route for the patient/client.
- Draw the right dose as prescribed, including expelling the air.
- Aseptic technique should be ensured while giving the injection.
- Administer the drug at the correct site.
- Dispose the used syringe and needle immediately into the sharp's container. (Patients should not be given used syringe and needle to carry home even if they came with the equipment).
- A patient should be kept for at least 5 minutes after the injection and be observed for any possible adverse effects.
- Thank the patient/client.
- Record the date and time of injection administration

Special note

- All patients undergoing an injection should be educated /counselled before injection is given e.g., type of drug, side effects, possible adverse events following the administration of the injection and total number of doses to be given by injection.
- Self-injecting patients such as diabetic patients should be properly informed about their medications and how to ensure safety of injection. In case a patient needs to take the injection equipment home he should be counselled on storage, disposal and sterility of their drugs and equipment.

3.5 Standards for waste management at Health Facility

3.5.1 Waste generation stage

- Pre-coded (red - colour) plastic garbage bags are the recommended system to dispose of medical waste that has been contaminated by blood or body fluid. Non-hazardous trash should be put into a different colour bag.
- Waste bins with lid and liners are recommended. The waste bins should have firm-fitting covers so that in case they are knocked or tipped over, they will not spill their contents onto the floor.
- Appropriate safety signs for dangerous wastes should be part of a larger system of lab safety that encompasses other aspects of infection control such as waste containment and staff education.
- In laboratories, encourage use of reusable materials *where appropriate e.g.* glass instead of plastic materials like Petri dishes.
- Segregate waste at point of generation: infectious waste should not be mixed with non-infectious one
- Containers should be sealed when $\frac{3}{4}$ full and delivered to dirty utility areas, inaccessible to vermin and people without knowledge on medical waste

- Following segregation, waste should be stored or disposed right away depending on its type.

3.5.2 Storage

- Interim storage containers are needed to store waste at the medical facility until it is destroyed on-site or picked up and transported away to be discarded. (Any system that maintains the waste in a secure locked area, covered, and sealed is suitable).
- Waste should be stored in a manner that does not expose providers, workers and the environment to danger

3.5.3 Transportation

- Workers who collect, transport and dispose of hazardous waste must be trained on proper work procedure, emergency procedures and the use of personal protective equipment. Gloves should be strong enough to withstand the stress of loading heavy bags are needed for the exercise, rubber-coated industrial gloves would be ideal. Waste disposal personnel should wear Goulashes/Industrial strength foot protection, as bags might break if over-filled with medical waste, if stressed by movement, or if they have been sitting for a long time before being picked up for disposal. Unlike foot covers for clinical and lab staff, these would be required.
- Should be regular (on a daily basis for organic waste)
- Transport in covered/sealed trucks & containers to avoid littering, leakage and unsightly situations.
- Where transportation is contracted, the contractor should be licensed by the appropriate authorities at the State level such as SMOH and or SMO Environment.

3.5.4 Treatment

- Depending on type of waste and availability of waste treatment technologies. alternative treatment technologies that are environmentally friendly and cost-effective should be encouraged.

Non-infectious waste does not need treatment. The following treatments are recommended: - Autoclaving for microbiology waste, Liming for Pathological waste (embalming is optional), Chemical decontamination for blood containing body fluids- hypo chlorite can be used, Infectious waste and sharps should be incinerated. If an incinerator is not available then the waste can be burnt with diesel and or firewood together with dry leaves or paper.

- Particular attention should be paid to the disposal of Radio Active elements according to national guideline.

3.5.5 Disposal Stage

- Medical waste should never be mixed with waste from other sources e.g. household, commercial and industrial waste.

- Disposal facilities should be away from residential areas and water sources
- Depending on the type of waste: burying for body parts and placenta, burying of incineration residual ashes in an appropriate pit.

4. Standards for the community

- After accepting to receive an injection, the client/patient should ensure that the needle and syringe to be used is sterile and from a sealed pack.
- A client/patient should not demand for an injection when the service provider does not think it is necessary.
- A client/patient cannot demand for a used injection device to take home.
- Communities should not keep injection equipment in their homes except special groups e.g., diabetic patients.
- Non-health professionals are not allowed to administer injections either in a health facility setting or in the community. In some circumstances, the community can be involved in the home based care of a patient (e.g. terminal cases of AIDS, cancer, etc.). In such circumstances the care givers should be informed on the best practices to prevent the transmission of bloodborne pathogens: hand washing before and after caring for the patients, using gloves when the patient bleeds, and disposing the gloves safely.
- Behaviour change among the public to minimize waste generation should be emphasized. The health personnel should assist the community in observing these precautions.

5. Other considerations to reduce the risk of Transmission of blood borne pathogens

5.1 Disinfection/Sterilization

- Autoclaves (compatible with local power supplies and with spare parts) should be installed. Spare parts should be available in case the device malfunctions, and staff should be trained to fix the autoclaves. Time-steam saturation-temperature (TST) indicators/Test strips for autoclaves
- Chemicals
The most common is sodium hypochlorite, the active ingredient in household bleach. Additional disinfectants with a broad disinfection power against bacterial and viral pathogens can be used as well, and are usually specific to a particular company.

5.2 Housekeeping

- Colour-coded laundry bags for healthcare waste disposal:
A system utilizing different colour bags or signs to indicate what laundry is soiled with blood/body fluids and what laundry is not should be established and kept constant for laundering.
 - Yellow – for infectious waste
 - Red – very infectious waste/blood products
 - Black – municipal waste
- Brooms and brushes
- Mops, cloths, and buckets
- Disinfectants
- Housekeeping gloves

Above items should all be available for routine use. An emergency kit should be prepared containing many of these items.

- Respirator masks, which provide protection against airborne infectious diseases, such as tuberculosis, should be used in settings where risk for contracting tuberculosis is high, such as in bronchoscope suites, in autopsy areas, and in spirometry rooms.

By observing the above norms and standards, you will have gone a long way in minimizing transmission of blood borne pathogens.
