# Medical Injection Safety Program – Namibia

## End of Project Report

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***Prepared for:***

**David Stanton, COTR**

**USAID Washington**

**Washington, DC**

***Submitted by:***

**University Research Co., LLC**

**Bethesda, MD**


# *Namibia – Medical Injection Safety Program: End of Project Report (2004-2009)*

***University Research Co, LLC (URC)***
***7200 Wisconsin Ave, Bethesda, MD 20814***

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## Attachment A: End of Project External Independent Assessment Report

# LIST OF ACRONYMS

| | |
|---|---|
| AB | Abstinence and/or being faithful |
| AIDS | Acquired immunodeficiency syndrome |
| ART | Anti-retroviral therapy |
| ARV | Anti-retroviral drugs |
| BCC | Behavior change communication |
| CMS | Central Medical Store |
| DCC | District Coordinating Committee |
| FBO | Faith-based organization |
| HCW | Health Care Worker |
| HIV | Human immunodeficiency virus |
| IEC | Information, education, and communication |
| IT | Information technology |
| M&E | Monitoring and evaluation |
| MIS | Medical Injection Safety (Program) |
| MOHSS | Ministry of Health and Social Services (Namibia) |
| NGO | Non-governmental organization |
| OGAC | Office of the Global AIDS Coordinator |
| OP | Condoms and other prevention |
| OVC | Orphans and vulnerable children |
| PDSA | Plan, Do, Study, Act (Quarterly Quality Improvement Meeting) |
| PEP | Post-Exposure Prophylaxis |
| PEPFAR | President's Emergency Plan for AIDS Relief |
| PLWH | Person living with HIV |
| PMDRC | Policy Management Development Review Committee |
| PMO | Principle Medical Officer |
| PMTCT | Prevention of mother-to-child transmission |
| PPC | Personal Protective Clothing |
| PPE | Personal Protective Equipment |
| SI | Strategic Information |
| SIGN | Safe Injection Global Network |

| | |
|---|---|
| STI | Sexually transmitted infection |
| TB | Tuberculosis |
| TCE | Total Control of the Epidemic (CBO) |
| URC | University Research Co., LLC |
| USAID | United States Agency for International Development |
| VCT | Voluntary counseling and testing (for HIV) |

# 1 EXECUTIVE SUMMARY

Under the President's Emergency Plan for AIDS Relief (PEPFAR), University Research Co., LLC (URC) assisted the Namibian Ministry of Health and Social Services (MOHSS) to improve the medical injection safety as well as safe disposal of medical waste in the country. The program was implemented nationwide. URC used a collaborative approach for testing various interventions to reduce transmission of blood borne pathogens through medical injections and sharps. Before developing the interventions in 2004, a rapid assessment was conducted to look at the existing injection and waste management practices to identify opportunities for improvement. Based on the assessment results, the URC/Namibia team worked with MOHSS and other partners to develop National and Regional improvement plans. A National Injection Safety Group (NISG) was also established to lead, support and monitor injection and waste management practices.

Over the life of the project, URC supported MOHSS to develop policy guidelines on infection control including medical injection safety and safe disposal of medical waste. URC also supported MOHSS with the distribution of post exposure prophylaxis (PEP) guidelines and the National Standard Treatment (STG) guidelines. The project trained over 7,000 public and private health care workers. In addition, the project procured over 350,000 safety boxes, personal protective equipment for waste handlers, and color coded disposal bin liners. As part of the procurement support, URC assisted the Central Medical Stores (CMS) in developing a procurement plan including the development of a tender for the safety boxes.

To influence provider prescription and injection administration practices, the project conducted regular chart audits as well as observed provider practices in a sample of facilities. The results from audits and observations were presented during the quarterly Plan-Do-Study-Act (PDSA) cycle meetings. Over the life of the project, significant improvements in provider practices were noticed. There were also significant reductions in sharps related injuries as well as increase in the use of post-exposure prophylaxis (PEP) among healthcare workers experiencing needle-stick injuries.

URC worked closely with MOHSS and its Information, Education and Communications (IEC) Office to develop a communication strategy and materials to change behavior of clients regarding the demand for injections and of providers on safe injection practices and prescription practices according to National standards. The project increased awareness regarding rational use of injectable drugs among both community member and healthcare workers. There were significant reductions in the use of medical injectable drugs over the life of the project.

A system for monitoring and evaluation of injection and waste management practices has been established through quarterly facility assessments followed by PDSA (plan, do, study, act) meetings at regional level. The regional and national MOHSS staff were actively involved in the PDSA cycles for ensuring long term sustainability of key project interventions. The project also worked with other USG implementing partners including MSH, TCE to further expand and improve the strategic interventions.

The projects impacts and outcomes have been documents by en external evaluation with has been attached as Appendix A with the report.

## 2 BACKGROUND

Over 16 billion injections are administered annually in developing countries for immunizations, therapeutic purposes, transfusion of blood and blood products and injectable contraceptives. While most injections are given for therapeutic purposes, only 5-10% of injections are given for immunization, and numerous injections are unnecessary and unsafe. In some developing countries, over 90% of patients visiting a primary health care provider are recipients of at least one injection. Overuse tied with unsafe injection practices caused approximately 8-16 million Hepatitis B virus infections, 2.3-4.7 million Hepatitis C virus infections, and 80,000-160,000 HIV infections worldwide by 1999. The World Health Organization (WHO) shows that unsafe injections now contribute to an estimated 250,000 new HIV infections each year, or 5% of all new HIV infections. The highest-risk populations are injection recipients, health care workers from contaminated needles and syringes, and the community from exposure to contaminated sharps waste.

URC completed a baseline assessment in July 2004. The results were used to identify strengths and improvement opportunities which were used to develop National, Regional and facility Injection Safety Improvement plans. The safe injection improvement package consisted of the following: Effective communication of safe injection guidelines to public and private healthcare workers; Ongoing monitoring of injection equipment use and disposal practices; Implement strategies to improve awareness among injections users (community) about safe injections; and overall capacity-building at national, regional and facility levels in infection prevention and control. The impact of these interventions were monitored closely to track changes in injection safety practices in the country.

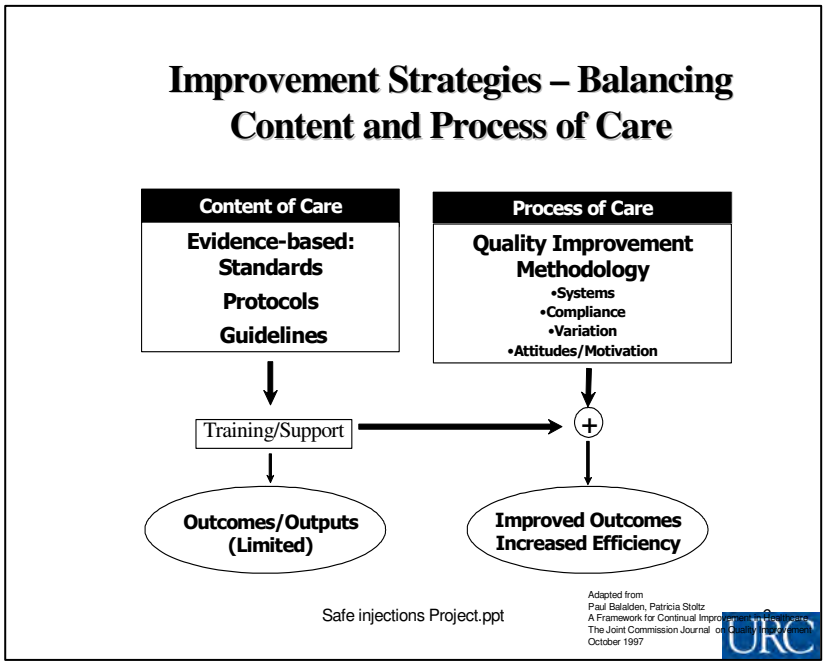
# 3 PROJECT GOALS AND OBJECTIVES

URC's goal for the safe injection project in Namibia was to achieve significant reductions in the transmission of HIV and other blood borne pathogens through improving medical injection practices in the country. The project aimed to reduce per capita injection use to less than one per year by the end of the project in 2009. The project also aimed to achieve significant decrease in needle-stick injuries over the life of the project through improved clinical practices. These two goals were to be achieved through the following: (a) develop and support national policy for safe injection practices; (b) develop and/or identify cost-effective and sustainable "best practices" to change provider prescription practices and community demand to reduce unsafe and unnecessary injections; (c) assist in improving the use of disposable/sterilized syringes; (d) improve infection prevention practices at facilities; and (e) improve disposal practices of sharps and implement standards for safe withdrawal of blood for HIV testing.

# 4 TECHNICAL APPROACH

URC worked with MOHSS to strengthen the capacity of the regional and facility-based managers to promote safe infection practices. The objective of the technical support was to improve both content of care and process of care. To decrease spread of blood-borne pathogens among patients and providers, URC focused on both what is done (content of care) and how it is done (process of care) at the same time (Figure 1).

**Figure 1: URC's model for Injection Safety Improvement**



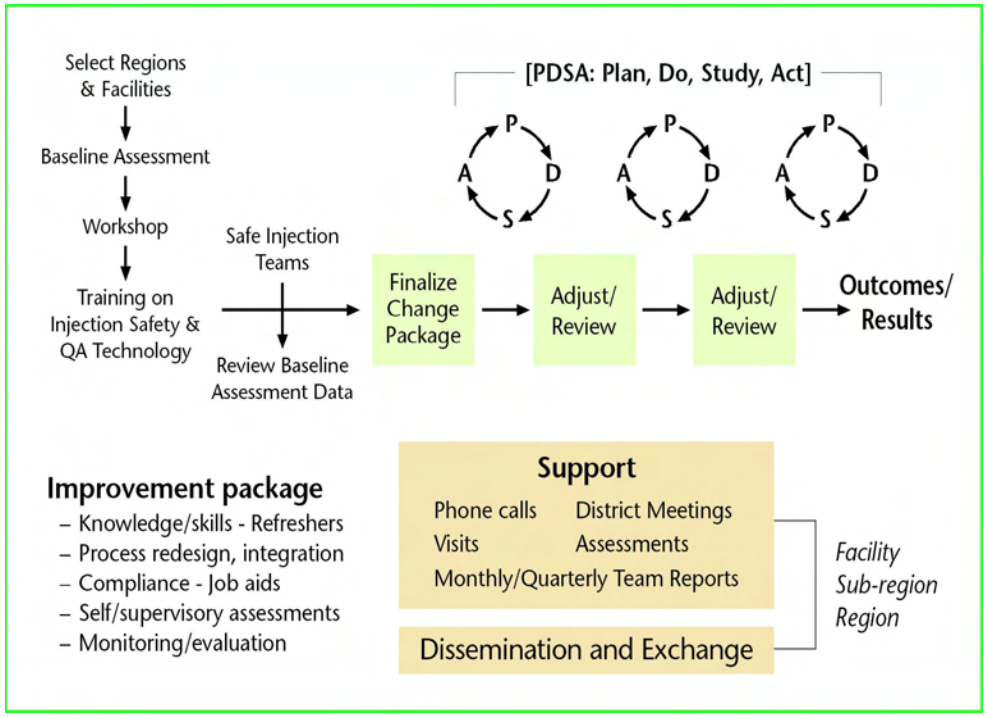

To improve the content of care, compliance with the evidence-based guidelines were improved though training, better communication of guidelines/protocols, and supervision. The process of care was improved through a better understanding of the system, bringing changes in injection practices and by reorganizing care or waste disposal practices to decrease needle stick injuries and the inadvertent spread of HIV and other blood borne pathogens among health workers and patients.

URC used a collaborative and continuous quality improvement approach for implementing the project. With this approach the MOHSS identified pilot areas for starting implementation of the project. URC, together with MOHSS, conducted a rapid baseline assessment to identify gaps in existing injection related practices, adapting tools from the SIGN Toolkit. Interviews were conducted with health-related policy-makers, health managers, health care providers (public and private), and community members. The analysis looked at quality of services, rationale for demanding or providing injections, compliance of providers with safe injection practices, and other aspects of care related to injections. The analysis also looked at injection-seeking behavior by patients and their caregivers. Through these analyses, strengths as well as gaps were identified to bridge the quality gaps, expand program coverage and improve outcomes. At the end of the assessment, findings were disseminated to National, Regional and facility-level. National and

Regional Injection Safety Improvement Plans were developed and implementation started in pilot facilities.

The improvement package consisted of the following: effective communication of safe injection guidelines to public and private service providers; ongoing monitoring of injection equipment use and disposal practices; improved awareness among injections users (community) about safe injection; and overall capacity-building at clinic and district levels. Over the life of the project, URC assisted regional- and facility-level staff in adapting the improvement package in their local settings. The participating regions conducted quarterly assessments as part of the PDSA cycle. Improvement plans were adjusted quarterly, based on the results of the quarterly assessments (see Figure 2).

**Figure 1: URC's Strategy for Quality Assurance**



# 5 PROJECT AREAS

The project covered all 13 Regions and 327 Facilities. All the 327 facilities are to a great extent in compliance with injection safety and waste management practices. The project also covered a number of large private hospitals as well as independent rural private providers.

**Table 1: Number of facilities participating in the Injection Safety Project**

| Region of Namibia 2009 | Total # of project facilities 2009 |
|---|---|
| Caprivi | 27 |
| Erongo | 18 |
| Hardap | 17 |
| Karas | 20 |
| Kavango | 42 |
| Khomas | 15 |
| Kunene | 28 |
| Omaheke | 18 |
| Omusati | 53 |
| Oshana | 16 |
| Ohangwena | 33 |
| Oshikoto | 14 |
| Otjozondjupa | 26 |
| **TOTAL** | **327** |

# 6 PROJECT ACTIVITIES, RESULTS, AND ACCOMPLISHMENTS

## 6.1 Project Activities

Over the past 5 years, URC assisted MOHSS in achieving significant reductions in the transmission of HIV and other blood borne pathogens through improving medical injection practices in the country. The key activities in support of this included the following:

### 6.1.1 Policy and Guidelines

***Objective:*** *To support MOHSS to establish a policy environment that will create an enabling environment for injection safety where guidelines are available to define expected behavior, where adequate resources are available for safe injection practices, where core values support injection safety and quality of injection practices is continuously monitored and improved.*

The National Injection Safety Working Group (NISG) was constituted with representatives from MOHSS, WHO, CDC, USAID, and other stakeholders. The group met periodically to assist with the development and monitoring of injection safety and waste management guidelines. I

URC supported MOHSS to draft guidelines for the development of a National Quality Assurance Policy, Infection Control Policy and Medical Waste Management Policy. URC also supported the launching and distribution of PEP guidelines. Distribution of Standard Treatment Guideline job aids was also supported.

### 6.1.2 Rational Use of Injectables

***Objective:*** *To work with RPM+ to support MOHSS to implement the National Standard Treatment Guidelines and reduce the prescription of unnecessary injections.*

URC worked with RPM+/SPS projects to support MOHSS with rational drug use. RPM+ participated in the National Injection Safety training and Improvement Plan development.

URC created awareness regarding prescription practices and the need to reduce the prescription of unnecessary and unsafe injections practices. URC also supported MOHSS with distribution of a job aid on the National Treatment Guidelines and in the process creates awareness of the guideline. Record audits were performed at pilot hospitals to assess prescription practices.

### 6.1.3 Post Exposure Prophylaxis (PEP)

***Objective:*** *Support MOHSS to develop and implement PEP guidelines at facility level to provide access to PEP for all health care providers.*

URC supported MOHSS with the operationalization of the PEP guidelines at facility level. This included increasing awareness among staff to report needle stick injuries as well as the use of PEP when exposed to sharps. Over the life of the project, access to PEP improved significantly in the country. Knowledge on obtaining PEP within 72 hours had increased from 47% in 2004 ti universal by the end of the project.

URC also created awareness of the Hepatitis B vaccination. The National Infection Control Policy requires all health care providers to be vaccinated. This was however only been done in Windhoek at the start of the project.

### 6.1.4 Involvement of Private Providers

***Objective:*** *To support private health care providers to improve injection and medical waste management practices.*

URC worked closely with MOHSS to liaise with private health care providers to assess the existing injection and medical waste management practices and to support private providers to develop and implement interventions to improve injection and medical waste management practices.

### 6.1.5 Injection use Practices

***Objective:*** *Support MOHSS to provide training on safe injection practices and create awareness amongst providers on universal precautions for injection safety. Encourage compliance with standards for safe injection practices.*

URC supported staff at facility level with improving safe injection practices through training in injection safety and creating awareness of universal precautions for infection control.

### 6.1.6 Behavior Change

***Objective:*** *To support MOHSS to change beliefs and behavior of providers and clients to reduce the demand and use of injections and therefore reduce the risk of transmission of blood born pathogens through injection practices.*

URC developed a communications strategy for the safe injection program. URC is working closely with MOHSS and IEC in the development of communication materials targeted to improving knowledge about safe injection issues and to reduce demand for and prescription of unnecessary injections.

URC used community educators to raise awareness within the community regarding rational use of medication in order to reduce demand for unnecessary injections and ensure proper disposal of infectious waste produced by some community members, such as insulin-dependent diabetic patients. The community educators are members of the Total Control of the Epidemic (TCE), a community-based organization involved in HIV/AIDS prevention. These educators are reaching out to the community with Injection Safety and Waste Management messages translated into vernacular languages. The total number of community members reached with injection safety messages over the life of the project are approximately 78,574.

URC developed posters and wall charts along with simple job aids for healthcare workers to promote rational use of medical injections and safe disposal of sharps and medical waste. URC also developed a manual for sensitization of community members. In addition, URC provided support for the printing and distribution of IEC materials that were provided both within the health facilities and the community

### 6.1.7 Waste Management

***Objective:*** *To support MOHSS in collaboration with other ministries such as Ministry of Environmental Affairs and Ministry of Public Works to establish a standardized Waste Management System which will prevent health care providers and the community from injuries or infection resulting from medical waste.*

URC worked with MOHSS and other stakeholders in drafting a National Waste Management Policy. The draft policy provides guidelines for collecting, transporting and incinerating sharps and other medical waste. The policy also covers all types of private providers in the country. A National forum has been established where MOHSS and municipalities are working together on developing and implementing a National waste management plan. The forum is also investigating the possibility of testing new technology for waste management.

### 6.1.8 Commodity Management

***Objective**: To support MOHSS to establish a system of commodity management where all staff has adequate knowledge on procedures to order and distribute safe injection equipment, that staff comply with the guidelines and essential safe injection equipment is available at all facilities at all times according to need.*

At the start of the project, very few facilities had continuous access to safety boxes for discarding sharps as well as color coded waste disposal bags for discarding medical and infectious waste. Based on these finding, URC worked closely with MOHSS to develop a short-term strategy for providing these supplies using the project funds. The medium-term strategy was to help the Central Medical Stores to develop a procurement strategy for these as well as PPEs.

Over the life of the project, a total of 352,650 five and ten liter safety boxes have been distributed to the 13 regions. The project also provided support to improve health care worker practices regarding use of safety boxes and personal protective equipment (PPEs) for waste handlers. URC strengthened the logistics system through training at the facility, district, regional, and national levels. The safety boxes and plastic bin liners have been integrated into the Central Medical Supply, and URC have provided the MOHSS with technical specifications for the safety boxes so that the MOHSS could attempt to procure them locally. A government tender for the safety boxes is in process, meanwhile URC will be ready to procure a buffer stock for use during emergencies or stock outs.

As discussed above, the project also purchased PPEs for incinerator workers that included: overalls, boots, leather gloves, PVC sleeve protectors, aprons, goggles, filter respirators and cartridges. The MOHSS by the end of the project have integrated the procurement of the personal protective equipment within the Central Medical Stores system. A tender has already been put out for the procurement of these items.

### 6.1.9 Monitoring and Evaluation

***Objective**: To support MOHSS to establish a system for continuous monitoring and improvement of injection safety through monitoring content of care (availability of guidelines and staff knowledge and skills to comply with guidelines) as well as monitoring process of care (compliance with guidelines, efficiency of support systems, staff motivation and attitudes), identifying quality gaps, developing and implementing improvement interventions and continuous reporting of results.*

URC, together with MOHSS staff, developed various facility monitoring tools. Each facility monitors the following key indicators: availability of policies at facility level, availability of safe injection commodities, immediate disposal of syringes and medical sharps into sharps container at the point of use; number of needle stick injuries per quarter and percentage injured put on PEP; separation of sharps waste from regular waste at the point of use; use of sharps containers that are leak proof, puncture proof, closeable, and stackable; minimal handling of used sharps

before disposal; replacement of sharps containers when they are ¾ full to avoid overfilling that can result in needles piercing the sides; average number of injections per patient per quarter; type of medical injections targeted with non-injectable medicines and compliance with standards for injection preparation and giving of injections.

Quarterly assessments were performed to evaluate progress and identify good practices as well as quality gaps. The assessments are followed by quarterly PDSA meetings where results are evaluated and shared and improvement plans are adjusted according to need. URC will support MOHSS with continuous monitoring and evaluation at all participating facilities as well as the National and Regional improvement interventions.

### 6.1.10 Participation in international and regional meetings

The URC Namibia staff have attended the annual SIGN meetings to learn as well as share from its programmatic interventions. In addition, the project also attended the PEPFAR implementers meetings over the past several years. These regional and international meeting provided a forum to exchange ideas and learn from other country programs, which aimed at increasing the knowledge and experiences of the staff for better provision of services in the field.

## 6.2 Key results and accomplishments

Tables 2 to 4 provide an overview of key results of the project. The external evaluation of the project that was completed in September 2009, concluded as follows:

> **Since the baseline survey in 2004, the most remarkable change in the health system has been that that no re-use of syringes and needles was seen recently, and no facilities were sterilizing needles and syringes for general use. This represents a significant achievement of the MOHSS in the past five years.**

**Table 1: Status of Injection Safety Indicators: Policies and Commodity Management**

| A: Question Number on Quarterly Facility Assessment | B: Indicator | C: Baseline Assessment Tool C conducted in 32 hospitals 2004 interviewing approx 117 HCW[2] | D: Initial facility assessments, 5 regions, 2005 (2008 report)[1] | E: Jan-Mar 2009: % of facilities reporting (N=167) |
|---|---|---|---|---|
| **A** | **Policies Present in the Facility:** | | | |
| 1 | Written Waste Management | 22% | | 63% |
| 2 | Infection Control Policy | 28% | | 84% |
| 3 | PEP guidelines | 38% | 35% | 93% |
| 4 | Standard Treatment Guidelines | 57% | | 94% |
| **B** | **Commodity Management** | | | |
| 1 | Sufficient needles and syringes in stock | 100% | 100% | 95% |
| 2 | Protective clothing for waste handlers | | | 71% |
| 3 | Stock cards used to manage supplies | | | 85% |
| 4 | Stock outs on one or more oral antibiotics | | | 29% |

1 Quarterly assessment data from facilities enrolled in the project initially, as reported in the *Medical Injection Safety Program, Namibia: 2008-2009 Workplan*, submitted September 24, 2008. The number of facilities in the denominator 'N' is not known.

2 N is variable and reported when known.

## Table 2: Status of Waste Management Indicators

| A: Question Number on Quarterly Facility Assessment | B: Indicator | C: Baseline Assessment Tool C conducted in 32 hospitals 2004 interviewing approx 117 HCW[2]C | D: Initial facility assessments, 5 regions, 2005 (2008 report)[1] | E: Jan-Mar 2009: % of facilities reporting (N=167) |
|---|---|---|---|---|
| **C** | **Waste Management** | | | |
| 1 | Waste containers according to standard | 65% had a sharps container of any type including box | 2% | 95% |
| 2 | Waste containers replaced when 3/4 full | | | 95% |
| 3 | Waste Containers emptied and reused | Observed at baseline | Observed at baseline | 5% |
| 4 | Waste containers stored in place with no public access | | | 90% |
| 5 | Access to functional incinerators | | | 55% |
| 6 | Sharps seen outside facilities | 62% of 55 | 62% of 55 | 13% |

1 Quarterly assessment data from facilities enrolled in the project initially, as reported in the *Medical Injection Safety Program, Namibia: 2008-2009 Workplan*, submitted September 24, 2008. The number of facilities in the denominator 'N' is not known.

2 N is variable and reported when known.

**Table 3: Status of Injection Safety Indicators: Injection Practices and Availability of PEP**

| A: Question Number on Quarterly Facility Assessment | B: Indicator | D: Baseline Assessment Tool C conducted in 32 hospitals in 2004 [2] | C: Baseline facility assessments, 5 regions, 2005 (2008 report)[1] | E: Jan-Mar 2009: % of facilities reporting (N=167) |
|---|---|---|---|---|
| **D** | **Injection Process** | | | |
| 1 | Syringes and needles taken out of sterile package for each injection | | | 91% |
| 2 | Needles always removed from vials between each injection | 33% | 47% | 93% |
| 3 | Medication stored and prepared in clean designated areas | 18% | | 91% |
| 4 | Injection reconstituted with sterile diluents from single use vials | Use of IV fluids observed at baseline | 53% | 93% |
| 5 | Use of barriers (e.g. cotton) while opening vials/ampoules | | | 93% |
| 6 | Injection sites of patients cleaned with relevant solution before patients are injected | | | 95% |
| 7 | Patients hold cotton wool swabs on injection sites after being injected | | | 80% |
| 8 | Used needles, syringes, scalpels blades or other sharps seen outside of disposal containers where they could cause injury | 13% | | 5% |
| 9 | Staff wash hands before and after procedures | | 61% | 92% |
| 10 | Staff discard needles without recapping | 61% | | 94% |
| **E** | | | | |
| 1 | Staff know they should tell supervisor | | | 93% |
| 2 | Staff, including cleaners, know PEP should start ASAP and not later than 72 hours | | | 89% |

### 6.2.1 Policies and guidelines

URC was instrumental in the development and operationalization of various infection prevention and control policies and guidelines. Results of the facility assessments by end of the quarter and FY09 shows that 0ver 90% of the facilities have all the required policy and guidelines, and are using them. URC will provide further support to disseminate these documents (Waste Management Policy, Infection Control Guidelines, PEP guidelines and Standard Treatment Guidelines)

### 6.2.2 Waste segregation and sharp waste disposal

Healthcare waste is segregated at the point of generation and treated accordingly in most regions. Use of personal protective equipment has improved significantly. At the project's beginning only 2% of 32 hospitals in the baseline survey had safe sharps containers, compared to 95% of the 167 reporting facilities at the project's end. Most facilities have also begun distribution of safety boxes to diabetic patients for home use, which was well received. Overall knowledge on waste management has improved over the years.

### 6.2.3 Safe Injection knowledge and practices

Knowledge of safe injection has generally improved. Injection process continues to maintain a high standard. Each facility appointed a 'point person' to advocate for and supervise safe injections and related practices. The on-site person conducted quarterly facility audits, taught staff, worked with infection control and quality assurance committees and reviewed prescriptions. Patients are more and more often counseled on treatment options with emphasis on oral medication. Responsibility of facility assessment and auditing of injections that was carried out by facility supervisors has now been taken over by nurses in charge of facilities. When visiting teams monitor their knowledge on use of MIS data tools, they immediately notice shortcomings themselves and take note for sharing with others to improve the situation.

The rational use of injectable medication has also improved. By the end of the quarter, facility quarterly reports showed that the average number of injections prescribed per patient was less than 0.5 injections per patient visit compared to 1.42 injectable medications that were prescribed per person in the early facility reports at the beginning of the project

### 6.2.4 Post exposure prophylaxis (PEP)

PEP is now widely available, with guidelines and job aids present in all the facilities. Information about PEP and reporting is known to staff including morgue workers, students, laundry workers and waste handlers. PEP kits are available at some health facilities, and all healthcare workers have access to PEP through a referral system. At the end of the project, 93% of the facilities had copies of PEP guidelines available. URC reproduced and distributed copies, pamphlets, posters and flow charts summarizing the steps to take

### 6.2.5 Job aids

URC supported the development and distribution of posters on: a) safe discarding of used needles and syringes; b) first do no harm; c) color coded bags for correct segregation: d) hand hygiene ; d) prevention cross infection; e) PEP flowchart; f) responsibilities of HCWs when injured on duty; g) Nature of the Workforce. All healthcare facilities have these posters that aid the staff in their duties (see Figure 3).

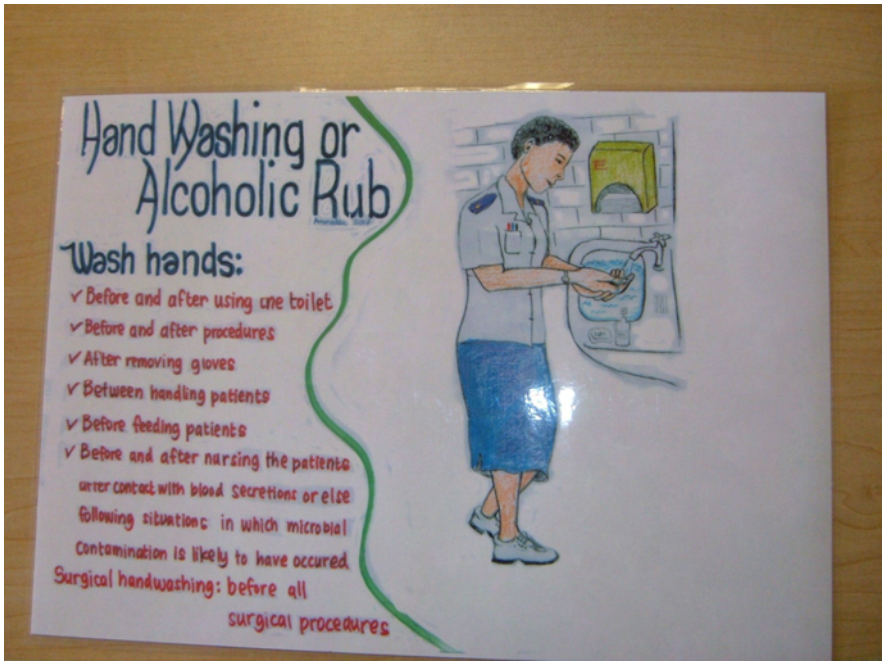
**Fig. 3**: Waste segregation poster displayed in all the facilities


### 6.2.6 General Hygiene and universal precautions

The level of cleanliness continues to improve for most of the institutions, including those which were slower in implementation of best practices such as Outjo Hospital, Kaman Jab Health Center, and Otjiwarongo Hospital. There is still a lot to do to bring all the regions up to standard.

Hand washing is becoming a culture for all health care facilities. Hand disinfectant and hand paper towels are in use in most facilities. The use of communal towels is no longer observed in most healthcare facilities. Trends in hand hygiene are still monitored graphically, and the scope is being widened to include infection control. Hand washing is further reinforced by use of posters both for health care workers and community members

**Fig.4:** Hand washing poster for healthcare workers




### 6.2.7 Capacity Building

All health facilities have a number of staff trained. The capacity of the MOHSS to take over training has improved. The ability for regional facilitators of the MOHSS to assist district facilitators in workshops without the relying on a URC Regional Coordinator has greatly improved. Feedback to the District Coordinating Committee (DCC) in regions encouraged Principal Medical Officers (PMOs) to be involved in safe injection implementation activities. On-the-job training in injection safety and waste management is still continuing in most of the facilities. Logistics support has also improved as a result of exposure of focal persons to training. District and regional leadership are more committed in taking corrective actions based on challenges identified during supportive supervision.

### 6.2.8 Hepatitis B vaccination

Hepatitis B screening and vaccination has improved in all regions.

# 7 CHALLENGES

Insufficient supply of liquid soap, hand paper towels, hand disinfectants have been reported in some of the facilities. This impacts on compliance to hand hygiene practices by healthcare workers and consequently increases the risk of hospital acquired infections.

There is no water for handwashing in some health facilities, such as Etanga Clinic in Opuwo district. In the Outapi District Hospital, poor hand washing is still a problem because of no hand wash basin available in the casualty ward, and in Mahenene Health Center no hand disinfectant is available. Use of communal towels for hand drying continues in a small number of facilities because of lack of hand paper towels in those facilities.

Because vacutainers are being reused, recapping of phlebotomy needles continues in health facilities. The MOHSS is aware of the issue and is in the process of tendering for disposable vacutainers.

Cleaners perceive the surgical gloves as being superior to the heavy duty gloves. The majority of staff also thinks that masks provide protection against diseases even in a non risky environment. As a result, they are misusing the two items mentioned. Despite identification of the problem and discussions with the regional management, small progress has been made in this area. URC is procuring heavy duty gloves to waste handlers in all regions, but this is not sufficient if it is not supported by an education plan based on scientific facts to teach and encourage the relevant behavior.

Occasionally facilities do experience shortages of color coded bags especially red and black. Inappropriate use of the color coded bags and incompliance with waste segregation remains a challenge in some regions. Non-functional incinerators are still an important and chronic problem. Districts very often have to help each other because of breakdowns of existing incinerators, which adds transportation challenges to the difficult task of managing infectious waste. Needles and blades are still found in the ashes after combustion of wastes. Some facilities do not have adequate storage space for the health care risk wastes. The wastes are therefore left out in an open space, which is not the standard and thus posing a risk to both patients and healthcare workers.

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