SITUATION ANALYSIS OF INFECTION PREVENTION AND CONTROL IN BISHKEK AND OSH, KYRGYZSTAN

FINAL REPORT

JULY 2008

This publication was prepared for the United States Agency for International Development (USAID) Central Asian Region (CAR) under AIDSTAR-One.

Contract information: This report was prepared for USAID under AIDSTAR-One, Contract No. GHH-I-00-07-0059-00 Task Order: 1.

Recommended citation: I. Hossain and J. Songa. 2008. *Situation Analysis of Infection Prevention and Control in Bishkek and Osh, Kyrgyzstan*. Bishkek, Kyrgyzstan: AIDSTAR-One through the Making Medical Injections Safer Project for the Office of the Global AIDS Coordinator and the US Agency for International Development.

The views expressed in this document do not necessarily reflect those of USAID.

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ACRONYMS

AD	Auto-disabled
AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral Therapy
BCC	Behavior Change Communication
CAR	Central Asia Region
CDC	U.S. Centers for Disease Control and Prevention
Hep-B	Hepatitis B
HIV	Human Immunodeficiency Virus
IDU	Injecting Drug User
IEC	Information, Education and Communication
IPC	Infection Prevention and Control
IS	Injection safety
IV	Intravenous
JSI	John Snow Incorporated
MOH	Ministry of Health
MMIS	Making Medical Injection Safer
NGO	Nongovernmental Organization
PEP	Post-exposure Prophylaxis
PPE	Personal Protective Equipments
SES	Sanitary Epidemiological Service
STI	Sexually Transmitted Infection
USAID	United States Agency for International Development
UNAIDS	Joint United Nations Program on HIV/AIDS
WHO	World Health Organization

ACKNOWLEDGEMENTS

This situation analysis is an initiative of U.S. Agency for International Development/ Central Asia Region (USAID/CAR). The financial support and initiative of USAID/CAR made it possible to conduct this assessment of infection prevention and control (IPC) in Bishkek and Osh, Kyrgyzstan. We would like to express our appreciation to Ministry of Health (MOH) officials in Bishkek and the staff of the health facilities in Bishkek and Osh who provided full cooperation and valuable time for the interviews, as well as showing the IPC practices in different units of the hospitals. The CAPACITY Project staff deserves special thanks for their outstanding support in arranging interviews, field visits and also for their generous hospitality during the consultants stay in Kyrgyzstan. Finally, sincere thanks to the staff of AIDSTAR-One and MMIS for their tireless support that made this assignment a reality.

EXECUTIVE SUMMARY

Upon request of the U.S. Agency for International Development/Central Asia Region (USAID/CAR) the AIDSTAR-One Project engaged two senior staff from JSI's Making Medical Injection Safer (MMIS) project as consultants to conduct a situation analysis of infection prevention and control (IPC) capabilities in the health facilities situated in the cities of Bishkek and Osh, Kyrgyzstan. This assessment was implemented in response to the use of contaminated blood and poor infection control and medical procedures were identified as underlying causes of an HIV epidemic among children in 2007. The main purpose of the assessment was to identify the strengths and areas for improvement within the current IPC system, including institutional capacities and roles as well as current activities and practices at the hospital level. The consultants interviewed Ministry of Health (MOH) officials, visited in-service training institutions, and conducted assessments at nine health facilities in Bishkek and Osh to observe IPC practices and interview health care workers.

FINDINGS

An infra-structure exists in Kyrgyzstan for IPC at the MOH and the facility level. The Republican IPC unit was established in 2004 and is responsible for developing policies and guidelines, and conducting IPC training for all hospital staff in all regions of the country. The Unit developed national IPC guidelines in 2006. Also within the MOH, the Sanitation and Epidemiology Services (SES) unit monitors all hospital acquired infections, including HIV. Also at the national level, there is an in-service training institution, the Medical Institute for Retraining of Personnel, which arranges in-service training for different cadre of health care professionals in different subjects including IPC. Each health facilities visited had designated IPC manpower (IPC expert) and had established an IPC committee.

The central IPC unit is under-staffed and under-budgeted and therefore could not conduct IPC training for hospital staff in Osh, the region where the HIV epidemic occurred among infants.

In-general a high level of awareness of IPC was observed among hospital staff. This may be due to recent MOH orders and the action, often punitive, taken against some of the health care workers in response to the HIV outbreak among infants. Some good IPC practices were observed in most of the hospitals particularly in relation to hand hygiene and use of aprons, masks and gowns, and in injection practices; but, many risky practices were also observed: recapping of needles after injections, two-handed blood transfer after drawing blood, walking with used syringes and needles, sticking needles in the multi-dose vials, and unsafe collection, transportation and final disposal of health care waste. Lack of supplies and overcrowding of patients (e.g. more than one child were found in the same cot and incubator in the peri-natal wards) contribute to creating an environment conducive to HIV exposure and possible infection.

There is a chronic shortage of some essential IPC commodities including gloves, and injection and infusion supplies like intra-venous (IV) catheter and needles and butterfly needles. In the procedure room staff was found using the same gloves again and again in conducting procedures. Because IV catheters and needles and butterfly needles were in short supply, there is a possibility that they may be reused. The financial resources are not adequate to procure adequate quantities of these commodities. A bundling policy (one syringe and one needle for each injection medication) as recommended by WHO is not followed during the procurement of commodities.

The WHO/Safe Injection Global Network (SIGN) recommended approach includes reducing the risk of reuse of injection equipment through adequate supply of syringes and needles preferably with reuse prevention features. Also, the WHO/SIGN approach recommends implementing a process for the safe disposal of health care waste, including sharps, to reduce the risk of the waste to the health workers, patient and broader community. Currently, Kyrgyzstan is not using syringes with reuse prevention features in the curative health sector. Standard safety boxes are also not available for the curative sector. None of the hospitals had vacuum blood collection sets available. There is lack of appropriate equipment for segregation, collection, transportation and final disposal of health care waste, and for personal protection of health care workers. Health care waste (sharps, infectious, non-infectious) are dumped together in an unprotected area that is accessible to people, animals and birds. There are no incinerators in any of the hospitals for treatment of sharps and infectious waste. Burning (in a hole or in a container) was the main method of sharps disposal causing serious environmental hazards.

The supervision system inherited from the former Soviet approach is more of inspection than supportive supervision. Health workers appeared in a panic and extra-cautious in sharing information. There is very little incentive and no recognition of good work. Kyrgyzstan is losing its trained health workers who are migrating out of the country due to low salaries (remuneration) and low morale. Health care workers are migrating to other countries (particularly to Russia) for better remuneration and better standard of living. The facilities are continuously replenished with new staff, which makes it difficult to maintain the quality of services. The migration is causing acute shortages of health care workers particularly in the facilities in the south region (Osh).

During the assessment, it was reported at all levels that there is high demand for injection, IV transfusion and blood transfusion as treatment options among patient (particularly in Southern region). However, there is a lack of health worker and community education on the risks of unsafe injections and even when an injection is needed. There was little or no awareness of the rational use of injections or the effectiveness of alternative medications (e.g. oral medications) to injections. Prescribers do not have the resources or training available to them to counsel patients effectively.

A gap analysis was conducted to identify content for organizing a short course of in-service training in infection prevention and control for staff of selected hospitals of Bishkek and Osh. Also, the following recommendations were made for long-term program planning to improve the system, updating policy guidelines, improving supplies, capacity building and training, health care waste management, health care worker safety, behavior change communication and preventing cross-infection.

RECOMMENDATIONS:

I. Strengthening Health Care System

1. MOH may consider increasing the capacity of the Republic IPC unit in terms of manpower so that the unit is able to expand its activities to all hospitals in all regions of the country.
2. MOH and donor partners, including USAID, may consider providing additional budget and technical assistance support to the IPC unit so that it is able carry out its program in all hospitals of all regions.
3. As part of health system strengthening, efforts should be made by the Kyrgyz Government to retain their trained health workers (by reviewing salary and benefits) so that they do not migrate out of the country.

II. Updating Policy Guidelines and Broad Distribution

1. MOH (IPC unit) with technical support from donors should revise the IPC guidelines to include relevant information (based on WHO guidelines) on safe injection and safe blood drawing, and for safe management health care waste.
2. The revised IPC guidelines should be made available to all health facilities and key staff in the country in accessible formats.
3. MOH should develop a policy for Hep-B vaccination for health care workers.

III. Making IPC / IS commodities available

1. The MOH and donor partners, including USAID, should make more resources available for procuring IPC supplies including safe injection/blood drawing commodities (e.g. adequate quantities of gloves, needles, syringes, butterfly needles, IV catheter, soap, alcohol rub, gauge and cotton), and supplies for safe disposal of health care waste including personal protective equipments (heavy-duty gloves, boots, protective clothing etc.).
2. The MOH should exercise more oversight and control over hospitals regarding procurement and logistics management, for example to make sure that a bundling policy (one syringe and one needle for each dose of injection medication) is followed during procurement. Donors, including USAID, can provide or acquire technical assistance to support hospitals in forecasting of the appropriate type and quantities of injection supplies.
3. Hospitals should be able to manage supplies better by applying the concepts of buffer stock and emergency stock to avoid stockouts and cope with the emergency situation. Hospitals need technical assistance from donors such as USAID in developing and implementing supply management systems.
4. The MOH should advocate with the hospital management and assist them to procure syringes with reuse prevention features for curative health services.
5. The MOH should advocate with the hospitals and assist them to procure standard safety boxes for immediate disposal of used needles and syringes.

IV. Capacity Building and Training

1. The health care workers who did not get training from the IPC unit in the southern region (Osh) should be trained in IPC. Donors, including USAID, should work with MOH to ensure that adequate TA and resources to conduct such trainings are available.
2. The Retraining Institute should arrange in-service training based on the need (e.g. identified gaps) and should conduct periodic assessments to identify the gaps in IPC practices. Donors, including USAID, should work with the Institute to ensure that adequate TA and resources to conduct such training are available.
3. The pre-service training curricula of medical and nursing students should be evaluated for the inclusion of infection prevention and control, injection safety and health care waste management and where needed these areas should be included. USAID and other donors could support efforts to update the curricula if necessary
4. The Medical Institute for Retraining of Personnel should include IPC and injection safety (IS) as part of continuing medical education and should be credited as part of the requirement for higher education or promotion.

5. Health care workers should be trained in state of the art technologies (WHO recommended) in IPC and injection safety as part of in-service training activities. Donors, including USAID, should work with MOH and other partners to ensure that adequate TA and resources to conduct such trainings are available.

6. Supervision should be supportive (not just inspection and taking punitive actions) in improving the performance of health care workers. Donors, including USAID, should work with the MOH to ensure that support supervision models are adapted and staff are trained in their use.

V. Health Care Waste Management

1. MOH and donor partners should provide the hospitals with resources for procuring appropriate (standard) equipment for segregation, collection, transportation and final disposal of health care waste.

2. Hospital authorities should fence the waste disposal area so that it is not accessible to scavengers, animals and birds.

VI. Behavior Change Communication

1. Prescribers should counsel patients and give client-centered information regarding the importance and suitability of oral medication as an appropriate method of treatment where possible.

2. BCC/ IEC materials should be developed for targeting patients on the promotion of oral medication and risks associated with injections. Donors, including USAID, should work with the MOH to ensure that materials are developed, tested and distributed to all health care facilities.

3. Prescribers should be trained on the rational use of injection medications. Donors, including USAID, should work with the MOH to ensure that TA and resources are available to conduct such trainings.

VII. Health Care Worker Safety

1. Hospitals should receive supplies for HIV testing following needle stick injuries and other exposures, and should receive supplies of post-exposure prophylaxis (PEP) medication using anti-retrovirals (ART).

2. All health care workers should get three doses of Hep-B vaccination free of charge as a matter of policy. Donors should work with the MOH to ensure this policy is revised

3. Appropriate PPE (e.g. heavy-duty gloves, boots, plastic gowns, goggles etc.) should be provided to health care workers, particularly to waste handlers and laundry workers.

VIII. Prevention of Cross-Infection

1. The IV infusion site and the sets should be changed whenever they are damaged and at 72 hours routinely. To ensure this and other improved practices, the IPC Unit within the MOH should adapt and incorporate the WHO Standard Precautions for Infection Prevention and Control into the in-service training curriculum.

2. Provision for hand washing should be improved with running water, soap and/or alcohol hand sanitizer in the hospitals.

3. Hospitals should be provided with an adequate number of cots and incubators particularly in peri-natal wards. Donor support may be required to ensure adequate supply of this equipment.

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1.0 GENERAL BACKGROUND

Kyrgyzstan has a population of 5.2 million with a mixed ethnicity (Kyrgyz 68%, Uzbeks 14%, Russians 10% and other 8%) in an area of 200,000 sq. kilometers (about 80% of the territory is mountainous). It is bordered by Tajikistan, Uzbekistan, Kazakhstan and China. The economy of the country is based on agriculture with a per capita GDP of US$ 542. The adult literacy rate is 99%, with life expectancy at birth being 66 years, and the infant mortality rate is 36 per 1,000 live births (2006). The two common languages of the spoken are Kyrgyz and Russian and two most common religions are Muslim and Russian Orthodox. It is one of the poorest countries in Central Asia with unemployment rate of 12.5%.The country has seven geo-political divisions (provinces) and Bishkek is the capital city. Osh City, the south capital of Kyrgyzstan, borders with Uzbekistan.

Since gaining independence from the Soviet Union, Kyrgyzstan has faced severe economic problems through its transition from a command economy to a market economy. Unemployment and poverty has resulted in an increase in sex work and injection drug use that fuels the HIV epidemic. The country is at the crossroads of the main drug-trafficking routes between East and West. The estimated number of adults and children living with HIV (whether or not they have developed symptoms of AIDS) in 2007 were 4,200[1], 4.2 times higher than the 2001 estimate. The cumulative number of reported HIV positive cases (1990-2006) were 1,055, a 14-fold increase on the level recorded in 2001. Sentinel surveys (2006) in Bishkek and Osh found HIV prevalence of 7.4% among intravenous drug users (IDU), 1.4% among female sex workers, and 3.5% among prisoners[2]. According to statistics of National AIDS Center, women are increasingly more vulnerable to become infected with HIV, especially in the southern region, because of in and out migration of the male labor force who are involved in unsafe sex. People living with HIV are often discriminated against and stigmatized.

[1] Epidemiological Fact Sheet on HIV and AIDS, Kyrgyzstan, 2008 Update, WHO, UNAIDS, and UNICEF.
[2] 2007 AIDS Epidemic Update, UNAIDS/WHO

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2.0 INTRODUCTION

In 2007, there was an outbreak of HIV among infants and children (between 16-23 months old) who received treatment in different hospitals in Osh and Bishkek. As it was unclear how the children contracted the HIV virus, the Ministry of Health (MOH) requested support from the U.S. Agency for International Development (USAID) to determine the source of transmission. In response, the USAID /Central Asia Region (CAR) initiated a number of activities to identify and address the underlying challenges of the problem and to develop long-term program planning to improve the situation. The Center for Disease Control and Prevention (CDC) through its Central Asia Regional Office conducted an initial epidemiologic evaluation of the outbreak among children in Nookat Rayon of Osh Oblast who received treatment in different hospitals between May –July 2007, and identified two primary causative factors: use of contaminated blood and poor infection control and medical procedures[3].

Upon request of USAID/CAR the AIDSTAR-One project engaged a team of two staff from JSI's Making Medical Injection Safer (MMIS) project as consultants to conduct a situation analysis of IPC in the health facilities situated in the cities of Bishkek and Osh. Both staff consultants possessed extensive knowledge and experience in infection prevention and control (IPC) and injection safety programs. The main purpose of the assessment was to identify strengths and areas for improvement within the current systems including institutional capacities and roles as well as current activities and practices at the hospital level. Also, the team was tasked with organizing a short course of in-service training in infection prevention and control, based on identified gaps, in selected hospitals of Bishkek and Osh with supportive supervision to follow. In addition, USAID/CAR will receive recommendations based on assessment findings, for long-term program planning.

2.1 OBJECTIVES OF THE ASSESSMENT

The specific objectives of the situation analysis were to:

- Assess availability of policy and guidelines related to infection prevention and control.
- Assess the availability of logistics and supplies for infection prevention and control.
- Assess the training for health care workers (in-service and pre-service) related to infection prevention and control.
- Observe infection prevention and control activities and practices in selected health care facilities.
- Identify best practices and gaps in infection prevention and control for arranging training for health care workers.
- Prepare recommendations to strengthen the infection prevention and control activities.

[3] Preliminary Report, Investigation of HIV cases Among Children of Nookat Rayon, Osh Oblast, Kyrgyzstan, CDC/CAR, August 20-30, 2007

2.2 MATERIALS AND METHODS

The AIDSTAR-One consultants developed assessment tools that included three broad areas; policies and guidelines, training of health workers (in-service and pre-service) and observation of infection prevention and control activities and practices (annex 2). The tools were shared with USAID/CAR for their review. The final assessment tools were translated into Russian. At the country level, the consultants teamed up with a local expert (Training Consultant) who accompanied the consultants during the assessment and will primarily be implementing the in-service training developed for hospital staff based on gaps in IPC practices identified through the assessment.

The methodology of the assessment included interviews with officials of the MOH (Republican Infection Control Center, National Sanitation and Epidemiological Station, Procurement Department and HIV/AIDS), in-service training institutions, blood banks and managers/supervisors of the hospitals, as well as observations of IPC practices in 2 health facilities in Bishkek and 7 health facilities of Osh. In the health facility, the team also visited pharmacies to get information on the stock situation, observed IPC practices in the laboratories, observed health care waste collection and disposal practices and conducted interviews with the health care workers. The interviews were done with the support of an interpreter. After each facility visit, the team debriefed the facility managers and key staff of the health facilities with the observation findings. The team also had opportunity to meet with officials of Hospital Association and City Hope--NGOs conducting research in the area of infection prevention and control. The list of personnel interviewed is provided in Annex 1.

2.3 PERIOD OF ASSESSMENT

The assessment was conducted from July 20 through July 31, which included visits to various departments in the MOH, visits to health facilities in both Osh and Bishkek cities, and a gap analysis in IPC practices. Additional work completed during this time period included debriefings with the USAID local representative, identifying content and method/materials of training and preparing a work plan for training as well as follow-up supervision.

3.0 ASSESSMENT FINDINGS

3. 1 INFECTION PREVENTION AND CONTROL (IPC) INFRASTRUCTURE

3.1.1 IPC UNIT

The IPC infra-structure from the central MOH to the health facility level in Kyrgyzstan is fairly good. The Republic IPC unit was established in 2004. The IPC unit prepares legal documents including policy and guidelines on infection prevention and control. It develops indicators for monitoring and epidemiological surveillance of hospital acquired infections. The IPC unit also conducts training for IPC experts at the regional level and health workers at the facility level. It piloted this program first in the northern region and has gradually expanded the program in other regions and thus far covered five of seven regions with its training.

However, the IPC unit is under-staffed and under-budgeted. The unit has only eight IPC experts to cover the whole country. The southern region (Osh), the epicenter of the HIV epidemic among children, was left out of IPC training reportedly due to unavailability of funds.

3.1.2 IPC COMMITTEES

Each health facility is mandated, according to the IPC guidelines, to establish an IPC committee. The principal purpose of this committee is to review hospital acquired infections and take remedial measures.

The terms of reference/ roles of the IPC Committee are to:

- Serve as a policy level body
- Approve certain measures for infection prevention and control in the hospital
- Advise the hospital management on what should be procured for infection prevention and control
- Provide oversight for the IPC activities and practices
- Deal with compliance and cleanliness in the hospital
- Investigate the nosocomial infections in the hospital

The Deputy Director of the Hospital is usually assigned to chair the committee. Members of the committee include the health officer in-charge, epidemiologist, chief nurse, IPC expert, bacteriologist, and pharmacist. The committee is supposed to meet monthly and/or when required.

It was reported during interviews with the central Sanitary Epidemiological Service (SES) that the IPC Committees are not efficient everywhere. In some hospitals the committees are not functional. The committees do not always meet monthly and do not share the minutes of the meetings with the higher level authorities at the MOH.

Remedial measures taken by this committee are often punitive in nature (e.g. fines, incarceration, and criminal charges) inherited from the former Soviet system, instead of support to health workers. As a result, the health care workers are fearful and more likely to hide the true situation in the health facilities when evaluated.

According to the central SES, violation of standard procedures by health care workers, lack of knowledge and awareness on standard IPC procedures, shortage of supplies (e.g. single IV catheter and needle) and quality control in testing (screening) blood donors were the potential causes of the HIV outbreak among children in Osh.

3.2 IPC POLICY

The national IPC policy guideline was developed by the IPC unit in 2006. The guideline contains decrees or orders (Prikaz) concerning the prevention of nosocomial infections. It also includes basic safety standards for medical procedures, and disinfection and sterilization standards in medical practices. The guideline covers basic principles of infection prevention; hand and arm hygiene; prevention of infection in giving injections, intravenous catheterization, in using intravascular equipments, vesicular catheterization, artificial respiration and operations, and sterilization/ disinfection of surgical and dental equipment, and cleaning of wards. It also includes tools for monitoring services at the health facility level including IPC activities.

The IPC guidelines lack information on reuse prevention of syringes and safety boxes, as well as standard guidelines for safe blood draw. It lacks guidelines on segregation, safe handling and final disposal of health care waste.

The MOH issued a number of Prikaz following the HIV outbreak in 2007 among children in Osh that have not been included in the document. These orders were sent to hospital authorities electronically, but the internet service is not available in many of the hospitals. The IPC policy guideline (document) needs to be revised to include relevant safe injection, safe blood drawing and standard health care waste management procedures, and as well for inclusion of recently passed IPC decrees by the MOH. It was also reported that there was shortage of IPC documents for the relevant staff at the health facilities all over the country.

The MOH issued instructions regarding post exposure prophylaxis (PEP). However, it was reported that the PEP policy exits only in paper, and is not implemented by the hospitals because of lack of supplies for HIV testing facilities as well as the prophylactic drugs (ART). The health care workers are not always reporting injuries due to stigma and fear of hospitalization. There is no MOH policy for vaccinating health workers against Hepatitis-B.

3.3 MONITORING OF IPC ACTIVITIES

The Sanitary Epidemiological Service (SES) is the unit in the MOH responsible for quality control of hospital services including IPC in the health facilities. It uses a checklist for monitoring purposes containing 121 indicators, developed by the IPC unit. It also monitors the activities of IPC Committees at the facility level. There are branch offices at the regional level that based on monitoring, offer recommendations to the IPC unit for taking action on identified gaps. The IPC unit then passes decrees (orders) to the hospitals for correction of identified gaps.

3.4 PROCUREMENT AND SUPPLIES FOR IPC

Kyrgyzstan has a decentralized system for procuring hospital supplies including IPC materials that allow health facilities to procure based on their needs. Limited procurement is done by the finance department of the MOH (e.g. medicine for diabetes for controlling sugar along with syringes) for distribution to the hospitals. The hospitals procure supplies through tenders and money comes from three sources, which include the MOH,

mandatory health insurance fund and co-payment of the patients. In addition, hospitals may generate their own income (e.g. leasing some part of its premises for private drug stores). Materials are also donated by donor partners, for example with funds from its Global Fund grant, the government provided protective materials (e.g. gloves) and intravenous catheter and butterfly needles for health facilities is Osh following the outbreak of HIV. NGOs also provide donations, which included a City Hope project supplying gloves for hospitals in Osh.

The MOH has a fairly strong regulatory unit that controls the quality of imported medical products. Vendors apply to the unit for a quality check and registration of the products before being made available in the market. Hospitals are only allowed to procure the supplies that were registered by the regulatory authority. However, the MOH has very little control over the procurement done by the hospitals.

It was reported during the assessment that money routinely available for procurement of supplies does not meet the actual requirements of hospitals. Hospitals have to accommodate all hospital expenses, salary of the staff, medical supplies and maintenance of the hospital from the same source of money. Moreover, hospitals do not follow the WHO recommended bundling policy during the procurement, for example 80% of money is spent procuring medicine while only 20% is spend for procuring corresponding supplies (like syringes, needles, catheters, gloves etc.) and the procurement system is not always transparent. Inadequate resources coupled with the lack of bundling policy cause a chronic shortage of supplies particularly for gloves, IV catheter and needles, butterfly needles and other IPC supplies. It was reported by the management of the several hospitals in Osh that the supplies of gloves, needles and IV catheter that were received from the Global Fund will last only for a couple of months and they do not know what will happen next.

The logistic management system is weak in the hospitals. There is no concept of buffer stocks to minimize stockouts of the commodities, especially for emergencies when the health worker has to act quickly to save lives. Materials may be reused (syringe, needle, IV catheter, etc.) in cases of stockouts to save lives in emergency situations.

None of the hospitals in both Bishkek and Osh procure syringes with reuse prevention features. The standard disposable syringes in use leave the potential for reuse. There is not much difference in the prices of standard disposable and safety syringes if procured in bulk quantity. Hospitals do not procure or do not have supplies of vacuum blood collection sets (Vacutainers). There is shortage of intravenous catheter and needles, butterfly needles and gloves in almost all hospitals. None of the hospitals procure standard safety boxes for immediate disposal of used sharps.

3.5 CAPACITY BUILDING AND TRAINING OF HUMAN RESOURCES

3.5.1 IN-SERVICE TRAINING

There is a national institution in Bishkek for the in-service training of health care workers. The institute provides in-service training periodically (post-diploma courses) for different cadre of health care workers, and arranges training for approximately 3,000 physicians, 4,000 nurses, and 1,000 family practitioners and about the same number of family health nurses annually. Standard (WHO and other international) curriculums are used for the training (e.g. TB, HIV/AIDS, STI, IPC etc.), and IPC is a special aspect of each curriculum. The methods of training are approximately 40% theoretical (lectures) and 60% practical. The institute does not conduct training in its own location; rather it coordinates with different units of the MOH and departments of different teaching

hospitals for conducting the training of the health care workers. For example, the institute coordinates with the Republic IPC unit for training of health care workers in IPC. This institute is funded by the MOH and the donor partners (ADB, Global Fund, and USAID).

The trained human resources of Kyrgyzstan, including the health care work force, have been migrating out of the country. The remuneration (salary) of the health care workers is very low. As a result, health care workers are migrating to other countries (particularly to Russia) for better remuneration and better standard of living. The facilities are continuously replenished with new staff which makes it difficult to maintain the quality of services. Once the new staff becomes experienced they are ready to leave. The migration is causing acute shortages of health care workers particularly in the facilities in the south region (Osh).

The in-service training institution does not have a system for conducting a needs assessment before designing the training contents. It does not make an effort to expose the health care worker on the state-of-the-art technologies, for example the health care workers are not trained with new technologies such as syringes with reuse prevention features for safe blood drawing (Vacutainer), and for health care waste management (safety box). Training does not cover standard precautions for safe injections, safe blood collection and safe disposal of health care waste.

3.5.2 PRE-SERVICE TRAINING

There are medical and nursing colleges for pre-service training of medical and nursing professionals. The consultants were not able to visit pre-service training institutions to discuss the contents of the curriculum of the medical and nursing training during this assessment. However, the consultants interviewed the health care workers and talked informally with on-duty medical students and nurses. These interviews and discussions revealed that infection prevention and control, particularly injection safety and health care waste management, are not included in the pre-service training curricula of the medical and nursing students.

3.6 OBSERVATIONS ON INFECTION PREVENTION AND CONTROL PRACTICES

3.6.1 BEST PRACTICES

Best Practices in Hand Washing

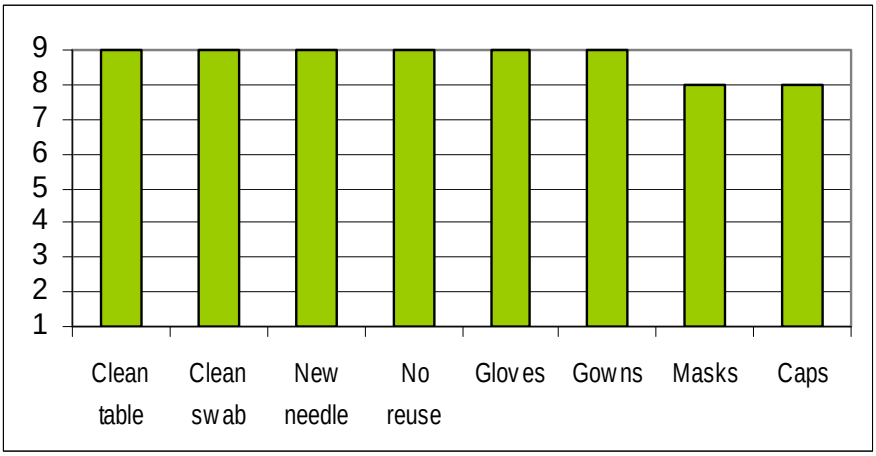
In all the nine hospitals observed the staff was found to be conscientious about hand washing before conducting procedures. In the procedure rooms in all of the hospitals there were provisions for washing hands (basin, soap, and towel). It was observed in some facilities that there was a job-aid related to hand washing on the wall above the basin which can serve as an effective reminder to health care workers for washing hands.

Picture 1: Showing Hand Washing Provisions, Practices and Job Aids in the Hospitals

Best Practices in Injection/ Drawing Blood

In all nine hospitals, clean dedicated tables were observed for preparing injections/ drawing blood, clean swabs were used for cleaning the site, and new needles and syringes (standard disposable) were used for giving injections and drawing blood. No reuse of syringes and needles were observed for injections and blood draws at the time of the visit. Staff was also found wearing protective barriers like gloves, gowns, masks and caps in most hospitals.

Graph 1: Best Practices in Injections/ Blood Drawing in the Hospitals



3.6.2 GAPS / WEAKNESSES OBSERVED

Lack of Running Tap Water

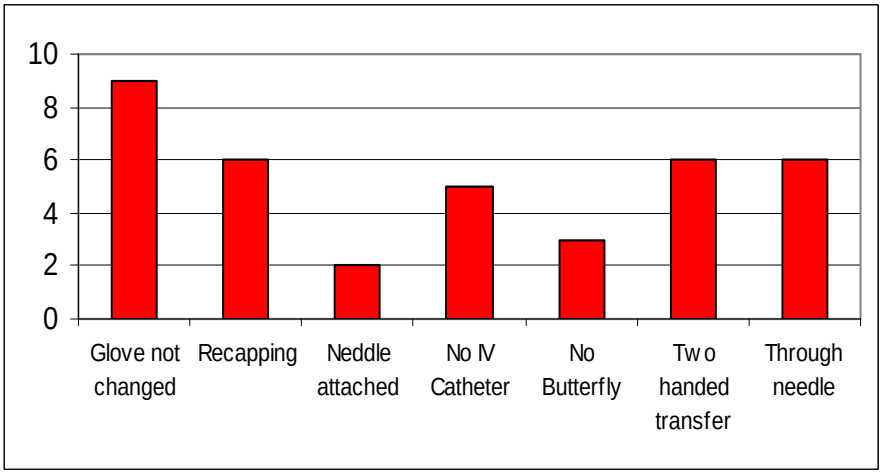
Although facilities for washing hands are available in all hospitals, a supply of running water from the tap is unreliable due to an intermittent power supply. In most facilities there is no provision for an alternative source of water to overcome the problem of the tap water supply. The sewerage system is not working in some hospitals. There is also shortage of hand sanitizer (alcohol rub) as an alternative method of hand hygiene.

Unsafe Injection and Blood Drawing Practices

Although gloves were available in all hospitals, in eight of the nine (89%) hospitals staff do not change gloves between the procedures as recommended by WHO as standard precautions. Therefore, new gloves were not used before conducting each procedure (e.g. before drawing blood). It was reported in one facility that they change gloves after every five procedures to save on the number of gloves used as they have a shortage of gloves.

In six of nine hospitals (67%) staff was found recapping used needles after giving injections or drawing blood. Needles were found in the rubber cap of multi-dose vials which may cause contamination of medications. None of the hospitals had syringes with reuse prevention features for giving injections. There was a short supply of injection devices, in five of nine hospitals (56%) IV catheters with needles were not available and in three out of nine hospitals (33%) butterfly needles were not available in the procedure room during the visit. In situations when essential devices are not available health workers may tend to reuse injection equipment during emergency situations to save lives. In Nookat Children's Hospital in Osh, a situation was observed where a newborn child (4 days old) with an acute respiratory infection and health workers worked to resuscitate the child, but no butterfly needle was available in the procedure room to give the child IV medication. While reuse was not witnessed during this situation, emergencies such as these could lead to demand for reuse to create supply.

Graph 2: Unsafe Injection & Blood Draw Practices and Shortage of Injection Devices



Staff was found recapping needles after blood draws, but none were using the WHO recommended one handed 'scoop' technique. In six of the nine hospitals (67%) two-handed blood transfer was observed and blood was observed transferred through the needle. None of the hospitals had vacuum blood collection sets available in the hospitals.

It was reported at all levels interviewed during the assessment that there is high demand for injection, IV transfusion and blood transfusion as treatment options among people (particularly in Southern region). On the other hand, shortage of supplies at the health facilities (e.g. single use syringe, catheter, and gloves) has been a hindrance causing unnecessary risk of contracting bloodborne infections among patients and health care workers. In addition, there is a lack of health worker and community education on the risks of unsafe injections and even when an injection is needed. There was little or no

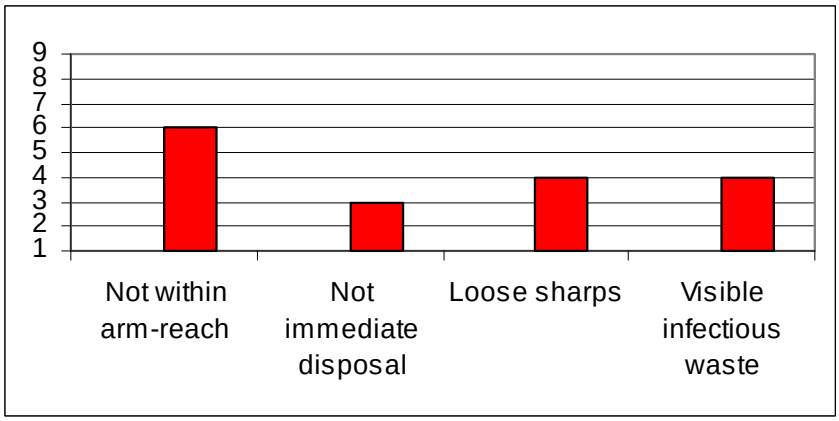
awareness of the rational use of injections or the effectiveness of alternative medications (e.g. oral medications) to injections.

The consultants could not assess the status of stock in eight of the nine hospitals because the Store Manager was not available (on vacation in most cases) during the visit. Using Global Fund resources, the government supplied the hospitals with butterfly needles and IV catheter with needles following the HIV outbreak among children. Reuse of these types of equipment was believed to be one of the causes of the epidemic.

Unsafe Sharps Waste Collection

In six of nine hospitals (67%) a sharps container was not within arm's reach. In three of the nine hospitals (33%) staff was not disposing of sharps immediately after giving injections or drawing blood. Loose sharps and visible infectious waste were observed, especially in the waste dumping site within the hospital premises in four of nine hospitals (44%).

Graph 3: Showing Unsafe Sharps Waste Collection Practices



None of the hospitals had standard safety boxes, instead each hospital has designed their own improvised reusable sharps container which can consist of an open bucket or bowl (as seen in the pictures below).

Picture 2: Improvised Sharps Collection Containers Used in the Hospitals

Hospitals also lack appropriate containers for segregation of health care waste. Infectious and non-infectious waste are often mixed. The containers are not color-coded and do not have hazard signs on them.

Unsafe Final Disposal of Health Care Waste

Burning was found as the most common method for final disposal of sharps waste (syringe, needle, IV catheter, butterfly needle etc.), which was done in an enclosure or a container, such as drums (as shown in the pictures below). The partially burned plastic syringes cause serious environmental pollution within the hospital premises.

Picture 3: Unsafe Methods for Final Disposal of Sharps Waste

One hospital in Bishkek claimed to be using a recycling method for the disposal of syringes. This method included separating the needle from the syringe using a needle cutter, treating the syringe in a chlorine solution, and sending it to a recycling factory. However, the hospital does not have a needle pit in the hospital and the needles are disposed of along with municipal waste (after treating them in a chlorine solution). None of the hospitals have an incinerator for the disposal health care waste.

Picture 4: Methods for Final Disposal of Non-Sharp Infectious Waste

In all hospitals the infectious waste (not including sharps) and general waste are dumped together in one corner of the premises. In most hospitals bio-hazardous waste (e.g. placenta, amputated body parts, discarded/ left over bloods etc.) are also dumped with the general waste. The waste dumping areas were unprotected (no fence) and accessible to scavengers, animals and birds. Loose sharps (needles) were visible in the dumping site. There is lack of coordination of hospitals with the municipal garbage collection authority as they do not come to collect general waste from the hospitals.

Picture 5: A Waste Handler Carrying Waste in a Poly Bag to Dumping Site

Waste handlers collect all kinds of waste (sharps, infectious, non-infectious) from wards, procedure rooms and laboratories and carry them to dump sites. They do not use or have personal protective equipment (heavy-duty gloves, boots and protective gowns), which puts them at-risk of needle stick injuries. In most hospitals the waste handlers are also

not trained. Also, laundry workers are at risk since they do not have any personal protective equipment.

Chance of Cross Infection

In children's hospitals at both Bishkek and Osh more than one child (newborn) was found in the same cot and/or incubator. This was because there were not enough cots and incubators in the hospitals, which put the newborn children at risk of cross-infections either through contact or via the hands of health workers.

Picture 6: Newborn Children Sharing the Same Cot

In fusion pathways (e.g. butterfly needles and IV catheters) were found kept in patients for long periods of time (sometimes more than five days), when WHO recommends it should be changed more frequently (no longer then three days). This practice is done reportedly to save the butterfly needles and IV catheters which are in short supply in most hospitals. It puts the children at risk of contamination and cross-infection. Any break or cut in the skin provides an opportunity for infection to develop with pathogenic organisms. Intravascular devices inserted into the venous or arterial blood stream provide a way for microorganisms to enter the blood stream through subsequent contamination of the devices.

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4.0 GAP ANALYSIS IN IPC PRACTICES

After finishing the observations in the designated hospitals, the team conducted an analysis of the gaps in IPC practices with a view towards identifying content for the in-service training of the hospital staff. The identified gaps were grouped in the following areas:

A. Hand Hygiene and Chance of Cross-Infection

- Hand hygiene
  - Lack of running water in the ward and procedure rooms
  - Lack of an alternative source (storage facility) for water
  - Lack of an alternative hand hygiene (e.g. alcohol rub) option
- Chance of cross infection
  - Inadequate baby cots – more than one newborn baby placed in the same cot
  - Inadequate incubators – more than one newborn baby placed in the same incubator
  - Inadequate supply of IV catheter needles and butterfly needles – potential chance of reuse in emergency situations
  - Inadequate supply of single use/disposable feeding tubes and urinary catheters
  - Long lasting intravenous pathways (e.g. butterfly needles sometimes kept in the vein for more than five days)
- Needles are kept in the rubber cap of multi-dose vials and infusion bottles
- Over-use of intravenous injections/ catheterization
- Over-use of blood and blood products

B. Unsafe Injections

- Inadequate supply of single use devices (syringes, butterflies, IV catheter sets)
- Lack of syringes with re-use prevention features
- Recapping needles after injections
- Manipulation of needles after injections (e.g. separation/ bending needles)
- Lack of appropriate sharps containers – open or improvised containers
- Used syringes are not always immediately disposed of in a sharps container
- Sharp container not within arms reach – providers hand carry used syringes and needles from ward for disposal in the container placed in the procedure room
- Over-filling of sharps containers

C. Unsafe Blood Drawing

- Lack of vacuum set for blood draw
- Inadequate supply of equipment (e.g. butterfly needle)
- Two handed recapping
- Two handed blood transfer
- Blood transferred through needle
- Needle removed with hand (not with forceps)
- Gloves not changed after each blood draw

D. Unsafe Health Care Waste Management

- In waste segregation
  - Lack of appropriate containers for waste segregation
  - Sharps and infectious waste are mixed
- In waste collection
  - Lack of appropriate containers for collection
  - Containers are not color coded
  - No sign to indicate hazardous waste containers
- In waste transportation
  - Waste handlers do not follow guidelines or are not aware of appropriate method of waste handling
  - Lack of personal protective equipment (PPE) for waste handlers (heavy duty gloves, boots, mask, gowns, and goggles)
- In final disposal of waste
  - After segregation at the point of generation, all waste are dumped together at the disposal site
  - Waste disposal sites are not protected – easy access to scavengers, animals, and birds
  - Lack of appropriate final disposal options
  - Lack of coordination with municipal office for collection of regular (non-infectious) waste
- For bio-hazardous waste
  - Lack of emphasis in proper disposal of contaminated blood and equipment from lab, blood bank and operation theater
  - Inadequate disposal options for disposal of placenta, organs and infected (amputated) body parts

- Laundry
    - Lack of PPE for workers handling used linens (e.g. bed sheets) in the ward and in the laundry

E. Supply Management

- Inadequate supply of gloves resulting in not changing gloves after each invasive procedure (e.g. blood draw)
- Inadequate personal protective equipments (PPE)
    - For health workers
    - For waste handlers
    - For laundry workers
- Lack of knowledge for forecasting requirement
- Lack of proper record keeping
- No bundling policy during procurement
- Stock out of supplies – no buffer stock or provision for emergency
- Procurement system not transparent

F. Behavior Change

- High demand for injection/infusion/transfusion from patients, particularly in the south of Kyrgyzstan
- Overuse of injections/infusions/transfusions
- Inadequate patient counseling
- Lack of IEC materials
- Lack of BCC for community awareness

G. Health Care Worker Safety

- Lack of PPE
- Lack of PEP
- Lack of Hepatitis-B vaccination
- High turnover of health care workers

H. Supportive supervision

- Lack of motivation of health workers/ supervisors
  - Low salary
  - Fear factor/ blame
  - Lack of recognition
  - Migration of workers
- Lack of training
- Inspection – not supportive supervision
- Long checklists

5.0 RECOMMENDATIONS

I. Strengthening Health Care System

1. MOH may consider increasing the capacity of the Republic IPC unit in terms of manpower so that the unit is able to expand its activities to all hospitals in all regions of the country.
2. MOH and donor partners, including USAID, may consider providing additional budget and technical assistance support to the IPC unit so that it is able carry out its program in all hospitals of all regions.
3. As part of health system strengthening, efforts should be made by the Kyrgyz Government to retain their trained health workers (by reviewing salary and benefits) so that they do not migrate out of the country.

II. Updating Policy Guidelines and Broad Distribution

1. MOH (IPC unit) with technical support from donors should revise the IPC guidelines to include relevant information (based on WHO guidelines) on safe injection and safe blood drawing, and for safe management health care waste.
2. The revised IPC guidelines should be made available to all health facilities and key staff in the country in accessible formats.
3. MOH should develop a policy for Hep-B vaccination for health care workers.

III. Making IPC / IS commodities available

1. The MOH and donor partners, including USAID, should make more resources available for procuring IPC supplies including safe injection/blood drawing commodities (e.g. adequate quantities of gloves, needles, syringes, butterfly needles, IV catheter, soap, alcohol rub, gauge and cotton), and supplies for safe disposal of health care waste including personal protective equipments (heavy-duty gloves, boots, protective clothing etc.).
2. The MOH should exercise more oversight and control over hospitals regarding procurement and logistics management, for example to make sure that a bundling policy (one syringe and one needle for each dose of injection medication) is followed during procurement. Donors, including USAID, can provide or acquire technical assistance to support hospitals in forecasting of the appropriate type and quantities of injection supplies.
3. Hospitals should be able to manage supplies better by applying the concepts of buffer stock and emergency stock to avoid stockouts and cope with the emergency situation. Hospitals need technical assistance from donors such as USAID in developing and implementing supply management systems.
4. The MOH should advocate with the hospital management and assist them to procure syringes with reuse prevention features for curative health services.
5. The MOH should advocate with the hospitals and assist them to procure standard safety boxes for immediate disposal of used needles and syringes.

IV. Capacity Building and Training

1. The health care workers who did not get training from the IPC unit in the southern region (Osh) should be trained in IPC. Donors, including USAID, should work with MOH to ensure that adequate TA and resources to conduct such trainings are available.

2. The Retraining Institute should arrange in-service training based on the need (e.g. identified gaps) and should conduct periodic assessments to identify the gaps in IPC practices. Donors, including USAID, should work with the Institute to ensure that adequate TA and resources to conduct such training are available.

3. The pre-service training curricula of medical and nursing students should be evaluated for the inclusion of infection prevention and control, injection safety and health care waste management and where needed these areas should be included. USAID and other donors could support efforts to update the curricula if necessary

4. The Medical Institute for Retraining of Personnel should include IPC and injection safety (IS) as part of continuing medical education and should be credited as part of the requirement for higher education or promotion.

5. Health care workers should be trained in state of the art technologies (WHO recommended) in IPC and injection safety as part of in-service training activities. Donors, including USAID, should work with MOH and other partners to ensure that adequate TA and resources to conduct such trainings are available.

6. Supervision should be supportive (not just inspection and taking punitive actions) in improving the performance of health care workers. Donors, including USAID, should work with the MOH to ensure that support supervision models are adapted and staff are trained in their use.

V. Health Care Waste Management

1. MOH and donor partners should provide the hospitals with resources for procuring appropriate (standard) equipment for segregation, collection, transportation and final disposal of health care waste.

2. Hospital authorities should fence the waste disposal area so that it is not accessible to scavengers, animals and birds.

VI. Behavior Change Communication

1. Prescribers should counsel patients and give client-centered information regarding the importance and suitability of oral medication as an appropriate method of treatment where possible.

2. BCC/ IEC materials should be developed for targeting patients on the promotion of oral medication and risks associated with injections. Donors, including USAID, should work with the MOH to ensure that materials are developed, tested and distributed to all health care facilities.

3. Prescribers should be trained on the rational use of injection medications. Donors, including USAID, should work with the MOH to ensure that TA and resources are available to conduct such trainings.

VII. Health Care Worker Safety

1. Hospitals should receive supplies for HIV testing following needle stick injuries and other exposures, and should receive supplies of post-exposure prophylaxis (PEP) medication using anti-retrovirals (ART).
2. All health care workers should get three doses of Hep-B vaccination free of charge as a matter of policy. Donors should work with the MOH to ensure this policy is revised
3. Appropriate PPE (e.g. heavy-duty gloves, boots, plastic gowns, goggles etc.) should be provided to health care workers, particularly to waste handlers and laundry workers.

VIII. Prevention of Cross-Infection

1. The IV infusion site and the sets should be changed whenever they are damaged and at 72 hours routinely. To ensure this and other improved practices, the IPC Unit within the MOH should adapt and incorporate the WHO Standard Precautions for Infection Prevention and Control into the in-service training curriculum.
2. Provision for hand washing should be improved with running water, soap and/or alcohol hand sanitizer in the hospitals.
3. Hospitals should be provided with an adequate number of cots and incubators particularly in peri-natal wards. Donor support may be required to ensure adequate supply of this equipment.

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6.0 NEXT STEPS

AIDSTAR-One was asked by USAID/CAR to conduct a situation analysis of infection prevention efforts in Kyrgyzstan, as well as conduct short course, in-service trainings in infection prevention and control, and supervision as follow-up to address the needs identified in the assessment. The initial activities implemented included conducting the assessment, developing a report with recommendations, developing an in-service training program based on the gap analysis from the assessment, and developing a tool and plan for follow-up supervision.

Training

AIDSTAR-One through training consultants will implement in-service training for the seven Osh facilities and two Bishkek facilities visited during the assessment. The in-service training curriculum will focus on identified gaps and related areas of identified weaknesses in IPC practices. Based on the AIDSTAR-One assessment, topics to be covered during the training will include: hand hygiene and prevention of cross-infection, safe injection practices, safe blood draw practices, establishing and implementing safe health care waste management, supply management, behavior change communication, health care worker safety and supportive supervision. All trainings conducted will use the participatory and hands-on methods of training, rather then lecture style of instruction. Participants will receive limited handouts and more practical demonstrations of promising and desired practices with real-life materials.

Supportive Supervision

The training consultants will conduct supportive supervision visits to each hospital during the month following the implementation of the in-service trainings. Following the outlined supervision plan, the consultants will use the developed tool to observe the IPC practices of each facility. Gaps identified will be corrected on the spot. In addition, common gaps will be shared with the hospital trainers so that they can arrange on-the-job training to address gaps found.

Long-Term Next Steps

Implementation of some report recommendations will involve long term planning by the MOH, as well as technical and financial support of development partners (e.g. USAID /CAR) and will not be addressed through the in-service trainings being conducted. These recommendations include:

1. Strengthening the IPC unit through increasing manpower and resources
2. Develop and implement plans to retain trained human resources in health care services
3. Develop, implement and provide training in health worker safety (e.g. Hepatitis vaccination and PEP policies)
4. Leverage additional resources for training, commodities and the safe disposal of health care waste.

The commitment of the MOH and financial support from donor partners is important for sustainable improvements in IPC practices in Kyrgyzstan. The MOH should plan to and add more manpower in the IPC unit while donor partners should provide more financial support to the IPC unit for them to carry out their training activities in all hospitals

through out the country. The MOH should consider establishing a branch of the IPC unit or at least a coordinator for the southern region. The MOH and donor partners should also provide funds to print adequate number of IPC guidelines for all relevant departments/staff.

An MOH review of the benefits package for health care workers could help retain them in the system instead of migrating from the country. Also, the MOH development of a policy and provisions for Hepatitis-B vaccination and post-exposure prophylaxis (PEP) would support the safety and security of the health care workers. Donor partners may extend their financial support for the provision of vaccines for health care workers and for implementing a PEP policy by providing testing kits and ART medications.

Prevention of stockout of injection commodities is critical to prevent reuse so that such incidence (e.g. HIV transmission among children) does not happen again in Osh or any other parts of the country. In addition to training, adequate quantities of injection commodities (syringes, needles, IV catheter, and butterfly needle), gloves and other protective equipments must be made available for safe injection and blood drawing in the hospitals. Donor partners may support hospitals with technical assistance in forecasting appropriate need and quantities of injection commodities. Donor partners should also support the MOH with additional resources to procure these commodities and add-on to the supplies being procured by the hospitals. The MOH should make sure that hospitals follow the bundling policy (one syringe & needle for each dose injection medication) during procurement.

The safe disposal of health care waste requires immediate attention from hospitals since this area has been highly neglected. Donors may support the MOH with additional resources to procure standard safety boxes, equipment for segregation and collection of wastes and for treatment and final disposal (e.g. incineration) of infectious waste. Donors may provide technical assistance to the MOH and hospitals in developing a safe waste management system. Hospitals will need funding for fencing the waste management area to protect the community from access and exposure to medical waste. In addition, if incinerators are constructed or repaired, hospitals will require funds to meet the cost of running (e.g. fuel) and maintaining the incinerators, for which the MOH should allocate additional budget.

Information, education and communication (IEC) materials should be developed targeting patients who visit hospitals, as well as the broader public to address the issue of unnecessary demand for injections within the community. Also, job aids and counseling materials should be developed for injection providers. Donors may support the MOH by providing technical assistance in developing targeted messages for and production of IEC materials (developing and pre-testing), job aids, and counseling materials, as well as printing and disseminating those materials.

USAID/CAR may provide further technical assistance in the following three areas:

- Developing a safe health care waste management system
- Forecasting the requirements (type and size) of injection and blood draw equipments
- Developing IEC messages and IEC materials (developing and pre-testing) and job aids and counseling materials to address the unnecessary demand of injection among people.

ANNEX 1: PARTICIPANT LIST FROM MEETINGS IN KYRGYZSTAN

1. USAID/ CAR/ KCO/
   - Project Management Specialist (Bishkek office) - Damira Bibosunova
   - Project Management Assistant (Osh office) – Mahabbat Alymkulova

2. Republic Practical-Scientific Center of Infectious Control with the Science and Production Association "Preventive Medicine"
   - The Head - Dzhumalieva Gulmira
   - Senior Scientific Worker - Bogdanov Emil r.
   - Scientific Worker - Soronbaeva nadir O.

3. The Kirghiz State Medical Institute of Retraining of Personnel
   - Director – Chubakov Telegen chubakovich

4. Republic Association "AIDS"
   - The Deputy Director – Bakiev Erkin
   - Deputy Director - Ismailova Aygul J.

5. Department of State Sanitary-Epidemiologic Supervision
   - Director – Isakov Tolen Baydalievich
   - Manager of the Epidemiological Division - Nurmatov Zurdinsh.

6. Republic Center of the Transfusion of Blood
   - Director – Dzhetigenova zhyldyz T.
   - Head of the Laboratory of Biochemistry –Kilina Galina A.

7. Department of Medicinal Guarantee and Medical Technology

8. National Center of the Protection of Motherhood and Childhood

9. Division of Strategic Planning with the Ministry of Public Health KR
   - Division head – Koshmuratov Alimzhan G.

10. Association of Hospitals
    - Director – Dzhemuratov Kanychbek D.

11. Ministry of Public Health KR
    - Division head – Sadykanov Asylbek

12. Karasuyskiy Region Center of State Sanitary-Epidemiologic Supervision
    - Head Physician – Razykova Taktayym R.
    - Deputy Head Physician –Eraliev Artyk
    - Manager Epidemiological Division – Isaev Akyl
    - Doctor- Epidemiologist – Zheemuratov Mamat A.

13. The Oshs Inter-Regional Children's Clinical Hospital
    - Director – Anarbaev Abdisamin A.
    - Deputy Director - Nurueva Zamira A.
    - Deputy Director - Akmatov Bakay A.

14. Urban Territorial Hospital
    - Director - Nuraliev Amanaly Zh.
    - Deputy Director - Muratov Abdizhalil A.

15. Urban Peri-Natal Center Osh
    - Head Physician – Stanbekov Myrza S.
    - Deputy Head Physician – Dzhumalieva Damira O.
    - Deputy Head Physician of Childhood – Kudayberdieva Batalum R.
    - Hospital Epidemiologist - Baranov Irina E.
    - The Infectious Control Nurse - Kultaeva Rosa Zh.

16. Urban Children's Infectious Hospital Urban Children's Infectious Hospital Osh
    - Akzholova Aychurek A.
    - Head Nurse – Tursunova Zamira
    - Hospital Epidemiologist – Tashbaeva Aadina
    - The Infectious Control Nurse – Abdurakhimova Miyasar

17. Osh Provincial Center of Blood Transfusion
    - Director – Shamshidov Osmonaly T.
    - Deputy Director – Moydunova Farida K.

18. The Osh Provincial United Hospital
    - Deputy Director – Zharmatova Temirkan D.
    - Chief Nurse – Musina Alfiya F.

19. Nookat Territorial Hospital
    - Director – Sultashev [tyygtyn] T.
    - Director – Sultashev TyygtynT.
    - Deputy Director – Matisakov Alik
    - Deputy Director –Matisakov Alik
    - Hospital Epidemiologist – Egemberdiev A.

ANNEX 2: ASSESSMENT TOOLS

Policy Assessment Tool

Instruction: Meet with the appropriate department / personnel of the Ministry of Health (such as Director of Hospital Services, and Officer in-charge of central medical store to discuss the IPC/IS policy and guidelines in the country, and to assess supply of materials for IPC/IS

MOH Department: _____

Person Interviewed:_____Designation:_____

Date: Day_____ Month_____ Year _____

Policy guidelines	Yes	No
1. Is there a policy document or guidelines for infection prevention and control? (If available get a copy of the document)	☐	☐
2. Is there a policy document for injection safety? (If available get a copy of the document)	☐	☐
3. Is there a policy document or operating guidelines, for blood safety? (If available get a copy of the document)	☐	☐
4. Is there a policy document or operating guidelines for health care waste management? (If available get a copy of the document)	☐	☐
5. Is there a policy document or operating guidelines for post-exposure prophylaxis for health care workers? (If available get a copy of the document)	☐	☐
6. Is there a program or activities for ensuring quality of services related to infection prevention and control? (If available get a copy of the document)	☐	☐
7. Is there an IPC Committee at the health facility level?	☐	☐
If yes, is there a TOR for the IPC committee? (If available get a copy of the TOR)	☐	☐
8. Is there an IPC Nurse in the health facilities?	☐	☐
If yes, is there a job description for the IPC Nurse?	☐	☐

(If available get a copy of the job description)

9. Is there a surveillance system for health care associated infections? ☐ ☐
(If available get a copy of the surveillance report)

10. Is IPC/IS included in the routine supervision system? ☐ ☐
(If available get a copy of the checklist and supervision report)

11. Are safe injection/blood drawing devices included in the essential drug list? ☐ ☐
(If yes, get a copy of the essential drug list)

IPC / IS Materials and Equipment	

1. **What materials do you supply to health facilities for hand hygiene? *(Circle response. Multiple response possible)***
   1. Soap
   2. Waterless antiseptics (alcohol rub)
   3. Antiseptic/anti-microbial agents
   4. Others (specify)_____

2. **What Personal Protective Equipments (PPE) do you supply for health care workers? *(Circle response. Multiple response possible)***
   1. Gloves
   2. Mask
   3. Caps
   4. Gowns
   5. Aprons
   6. Eye shield or goggles
   7. Others (specify)_____

3. **What PPE do you supply for house keeping staff and health care waste handlers? *(Circle response. Multiple response possible)***
   1. Heavy duty gloves
   2. Plastic gowns
   3. Boots
   4. Mask
   5. Eye shield or goggles
   6. Others (specify)_____

4. **What type of injection devices do you supply to health facilities for injection?** ***(Circle response. Multiple response possible)***

- **Standard Disposable syringe**
  a. 10 ML with attached needle
  b. 10 ML with detached needle
  c. 5 ML with attached needle
  d. 5 ML with detached needle
  e. 2/3 ML with attached needle
  f. 2/3 ML with detached needle
  g. 1 ML with attached needle
  h. 1 ML with detached needle
  i. Other(specify)_____
- **AD (re-use prevention) syringes**
  a. 10 ML with attached needle
  b. 10 ML with detached needle
  c. 5 ML with attached needle
  d. 5 ML with detached needle
  e. 2/3 ML with attached needle
  f. 2/3 ML with detached needle
  g. 1 ML with attached needle
  h. 1 ML with detached needle
- **Retractable (Re-Use & Needlestick Prevention syringes)**
  b. 10 ML with attached needle
  c. 10 ML with detached needle
  d. 5 ML with attached needle
  e. 5 ML with detached needle
  f. 2/3 ML with attached needle
  g. 2/3 ML with detached needle
  h. 1 ML with attached needle
  i. 1 ML with detached needle
- **Butterfly needle**
- **Plastic catheter**
- **IV Canula**

Other(specify)_____

5. **What type of devices do you supply for blood drawing in the health facilities?** ***(Circle response. Multiple response possible)***

- **Vacuum set:**

a. Holder
b. Needle
c. Purple topped tubes
d. Red topped tubes
e. Tiger topped tubes
f. Other tube (specify): _____

- **Standard disposable syringes:**

a. 10 ML with attached needle
b. 10 ML detached needle
c. 5 ML with attached needle
d. 5 ML detached needle
e. 2/3 ML with attached needle
f. 2/3 ML detached needle

- **Winged collection set (butterfly):**

a. Holder
b. Needle
c. Tube
d. Other (specify): _____

6. **What type of equipments do you supply for transfer after blood drawing?** ***(Circle response. Multiple response possible)***

1. Re-useable collection bottles
2. Standard test tubes (open)
3. Racks
4. Other (specify): _____

7. **What type of materials do you supply for disposal of health care waste?** ***(Circle response. Multiple response possible)***

a. Safety box
b. Bins
c. Bin-liners
d. Other (specify): _____

8. **What kind of dressing materials do you supply for health facilities?** ***(Circle response. Multiple response possible)***
   a. Gauge
   b. Cotton
   c. Bandage
   d. Other (specify): _____

9. **What decontamination materials / instruments do you supply for health facilities?** ***(Circle response. Multiple response possible)***
   a. Glutaraldehyde
   b. Chlorine solution
   c. Auto-clave
   d. Other (specify):_____

Comments:

Training Assessment Tools

Instruction: Meet with the appropriate department/personnel of the Ministry of Health (such as Director of Training) to discuss the in-service training for health care workers. Also, meet with the principals of the country's leading pre-service training institutions (such as a medical college, nursing college and laboratory technical school) to discuss pre-service training.

Institution / Department: _____

Person Interviewed: _____Designation:_____

Date: Day_____ Month_____ Year _____

In-service training	**Yes**	**No**
1. Is there any specific training program aimed at improving the following?		
1. Infection prevention and control	☐	☐
2. Injection safety	☐	☐
3. Health care waste management	☐	☐
4. Blood safety	☐	☐
(If yes, get a copy of the training curriculums)		
2. Which program/project conducted training for health care workers in infection prevention and control / injection safety? ***(Circle response. Multiple response possible)***		
1. Clinical services		
2. Lab services		
3. EPI		
4. Blood Bank		
5. Family Planning		
6. Others (specify)_____		

Pre-service training		
1. Do you teach/train your students on infection prevention and control? (If yes, get a copy of the curriculum)	☐	☐
2. Do you teach/train your students on injection safety? (If yes, get a copy of the curriculum)	☐	☐
3. Do you teach/train your students on health care waste management? (If yes, get a copy of the curriculum)	☐	☐

4. **What methods of training do you use for training in infection prevention and control and injection safety?** ***(circle response)***
    a. Lecture
    b. Demonstration
    c. Practical
    d. Other (specify)_____

5. **What types of syringe devices do you use for training students for giving injection?** ***(circle response)***
    a. Glass syringe
    b. Standard disposable syringe
    c. AD syringe
    d. Other (specify)_____

6. **What types of devices do you use for training students for blood drawing?** ***(Circle response, Multiple response possible)***
    a. Vacuum set
    b. Standard disposable syringe
    c. Butter fly
    d. Other (specify)_____

7. **What do you teach students for disposal of health care waste?** ***(Circle response, Multiple response possible)***
    a. Waste segregation
    b. No recapping
    c. Immediate disposal into safety box
    d. Final disposal
    e. Other (specify)_____

Comments:

Health Facility Assessment Tool

Instruction: *Visit selected facility and observe IPC and IS practices in the out-patient departments, wards and laboratories. Interview health care workers and facility managers or a supervisor. Check supplies of equipment and materials in the pharmacy. Seek clarification by direct questioning to staff on the negative situations you observed.*

Health Facility visited: _____ Unit: _____

Date of visit: Day_____ Month_____ Year_____ ___

A. Observation of IPC / IS Practices

IPC / IS /Blood Drawing Practices	Yes	No
1. Are materials available for hand hygiene?		
a. Clean running water in the facility/unit	☐	☐
b. Sinks or basins	☐	☐
c. Soaps (mounted preferable)	☐	☐
d. Towel	☐	☐
2. Do staff wash hands with soap and water or with waterless antiseptics (alcohol rub) before attending patient?	☐	☐
3. Do staff wash hands with antiseptic/anti-microbial agents before performing invasive procedures?	☐	☐
4. Do staff wash hands with antiseptic/anti-microbial agents before contact of patients who have immune defects or before direct contact with patients who have microbial resistant infections?	☐	☐
5. Is Personal Protective Equipment available in the facility / unit?		
a. Gloves		
b. Mask	☐	☐
c. Caps	☐	☐
d. Gowns	☐	☐
e. Aprons	☐	☐
f. Eye shield or goggles	☐	☐
g. Others (specify)_____	☐	☐
	☐	☐
6. Do staff wear new gloves before conducting an invasive procedure or when exposure to blood or body fluids is anticipated?	☐	☐
7. Do staff wear a mask before contact of patients who have immune defects or before direct contact with patients who have microbial resistant infections?	☐	☐

8.	Do staff wear caps, gowns/aprons before performing an invasive procedure or when exposure to blood or body fluids is anticipated?	☐	☐
9.	Do staff wear eye shields or goggles when exposure to blood or body fluids is anticipated?	☐	☐
10.	Do staff wear heavy duty gloves, mask, plastic gowns and boots during handling linen and health care waste?	☐	☐

11. Is injection equipment available at the facility / unit?	**Yes**	**No**
Standard Disposable syringe		
10 ML with attached needle	☐	☐
10 ML with detached needle	☐	☐
5 ML with attached needle	☐	☐
5 ML with detached needle	☐	☐
2/3 ML with attached needle	☐	☐
2/3 ML with detached needle	☐	☐
1 ML with attached needle	☐	☐
1 ML with detached needle	☐	☐
Other(specify)_____	☐	☐
▪ **AD syringes**		
10 ML with attached needle	☐	☐
10 ML with detached needle	☐	☐
5 ML with attached needle	☐	☐
5 ML with detached needle	☐	☐
2/3 ML with attached needle	☐	☐
2/3 ML with detached needle	☐	☐
1 ML with attached needle	☐	☐
1 ML with detached needle	☐	☐
▪ Butterfly needle	☐	☐
▪ Plastic catheter	☐	☐
▪ IV Canula	☐	☐
▪ IV infusion set	☐	☐

		Yes	**No**
12.	Was the injection preparation done on a clean, dedicated working table or tray where the contamination of the equipment with blood, dirty swabs or other biological waste is unlikely?	☐	☐
13.	For each injection given, were the needle and syringe either taken from a sterile pack or fitted with two caps?	☐	☐

14. For cases where the needle and syringe were NOT taken from a sterile pack*:* Was needle and/or syringe being re-used on this patient? ☐ ☐

15. Was there any evidence that an attempt is being made to sterilize **injection equipment** for reuse (such as needles and syringes in a steam sterilizer, autoclave, boiler, pot or dish of water)? ☐ ☐

16. Did the needle remain attached in the rubber cap of the multi-dose vial after withdrawing each dose for administration? ☐ ☐

17. For each reconstitution, were a sterile syringe and needle taken from either a sealed pack or fitted with two caps? ☐ ☐

18. Was the patient's skin cleaned with a clean swab or disinfectant before the injection was given? ☐ ☐

19. After the completion of an injection, was the used syringe recapped? ☐ ☐

20. Was the waste segregated in the injection areas into different containers for used sharps, infectious waste, and non-infectious waste? ☐ ☐

21. After each injection observed, did the provider immediately dispose of the used needles and syringes in an appropriate sharps container? ☐ ☐

22. Was the sharp container placed within arm-reach (unobstructed) of the provider? ☐ ☐

23. Were there any overflowing or pierced safety boxes (or sharps containers)? ☐ ☐

24. Were there any used sharps in an open container (other than a safety box) or otherwise loose (improperly disposed of) ***inside or outside the health center***, exposing providers or the public to potential needle stick injuries? ☐ ☐

25. Was there any infectious waste (other than used sharps) visible anywhere inside or outside the facility? ☐ ☐

26. Are **all** full safety boxes stored in a locked area that is inaccessible to the public? ☐ ☐

27. **What types of equipment are being used for blood drawing in the facility / unit?** *(Circle observations)*

- **Vacuum set:**

a. Holder
b. Needle
c. Purple topped tubes
d. Red topped tubes
e. Tiger topped tubes
f. Other tube (specify): _____

- **Standard disposable syringes**:

a. 10 ML with attached needle
b. 10 ML detached needle
c. 5 ML with attached needle
d. 5 ML detached needle
e. 2/3 ML with attached needle
f. 2/3 ML detached needle

Winged collection set (butterfly):

a. Holder
b. Needle
c. Tube
d. Other (specify): _____

Blood Transfer Equipment

a. Re-useable collection bottles
b. Standard test tubes (open)
c. Racks
d. Other (specify):_____

28. **How was patient's skin cleaned before blood draw?** ***(Circle observations)***

a. Swab with alcohol
b. Swab with water
c. Dirty swab
d. Not cleaned
e. Other (specify)_____

29. Was the blood draw equipment taken from a sterile unopened package? **Yes** ☐ **No** ☐

30. If using a syringe (not a vacuum set) how was the blood transferred from syringe to the collection tube? ☐ ☐

- Was the needle removed? ☐ ☐
- If yes, was forceps' used for removing needle? ☐ ☐
- Was needle recapped before removing needle? ☐ ☐
- Was one-handed recapping used?
- Was blood transferred into tube with cap?
- If yes, was the cap removed?

☐ ☐

31. If using a vacuum set, or winged collection set: ☐ ☐

- Was the needle recapped?
- Was the needle separated from the vacuum set or winged collection set? ☐ ☐
- Was the vacuum set or winged collection set disposed of as one piece?

32. **What did the health worker do to stop bleeding**?*(Circle response, Multiple response possible)*

a. Apply pressure with hand
b. Apply pressure with Gauge
c. Apply pressure with cotton
d. Nothing done
e. Other (specify)_____

33. After each blood draw did the health worker immediately dispose of used blood draw equipment in an appropriate sharp box container? ☐ ☐

34. Are dressing materials available at the facility/unit?

- Gauge ☐ ☐
- Cotton ☐ ☐
- Bandage ☐ ☐

Other (specify):_____ ☐ ☐

35. Are decontamination materials/instrument available in the facility / unit?

- Glutaraldehyde
- Chlorine solution ☐ ☐
- Auto-clave ☐ ☐
- Other (specify):_____ ☐ ☐

☐ ☐

36. Are job aids and BCC materials available in the facility / unit?

If yes, types of materials

- Reminders and/or job aids promoting IPC ☐ ☐
- Reminders and/or job aids promoting safe administration of injections ☐ ☐
- Reminders and/or job aids promoting safe blood drawing
- Reminders and/or job aids promoting safe disposal of used injection/blood drawing equipments ☐ ☐
- Reminders and/or job aids promoting oral medication

☐ ☐

☐ ☐

37. What is the main sharps waste disposal method in this facility to dispose of sharps waste? *(Circle the response. Multiple response is possible)*

1. Open burning on the ground.
2. Open burning in a hole or in an enclosure
3. High temperature incineration (2 chamber, industrial, (>1000°C)
4. Medium temperature incineration (Sicim, Demon fort, 800-1000°C)
5. Low temperature incineration (Single-chamber, “Drum” , brick)
6. Burial
7. Dumping in a pit latrine or other secure hole (pit)
8. Dumping in an unsupervised area
9. Transportation for off site treatment
10. Other (specify)

38. What is the main method of disposal for infectious waste? *(Circle the response. Multiple response is possible)*

1. Open burning on the ground.
2. Open burning in a hole or in an enclosure
3. High temperature incineration (2 chamber, industrial, (>1000°C)
4. Medium temperature incineration (Sicim, Demon fort, 800-1000°C)
5. Low temperature incineration (Single-chamber, “Drum”, brick)
6. Burial
7. Dumping in a pit latrine or other secure hole (pit)

8. Dumping in an unsupervised area
9. Transportation for off site treatment
10. Other (specify)_____

39. If an incinerator is used, what is done with the ash results from the incinerator? *(Circle the response. Multiple response is possible)*

1. Open dump
2. Sanitary landfill
3. Buried in secured pit
4. Buried in unsecured pit
5. Dumped in latrine
6. Left in pile near health center

Other (Specify): _____

B. Interview with Health Care Workers

*Instructions: Interview the health care worker in the facility / unit where IPC / IS /blood draw practices were observed. Also, interview the facility Manager or a Supervisor. (Conduct **one interview with health care worker per unit observed and one supervisor per facility).** Use a separate form for each unit.*

Health Facility: _____ Unit: _____

Category of health worker interviewed: _____

Date: Day_____ Month_____ Year _____

Interview with health care worker

			Always	Some times	Never	Don't know
1.	**Do patients bring their own materials for conducting any medical procedure?**	For out-patient services				
		For in-patient services				
2.	**Do patients bring their own syringes and needles for injection or blood draw?**	For vaccination				
		For therapeutic injection				
		For diagnostic injection				
		For blood drawing				
		For contraceptive injection				

3. In the last 6 months have you been out of stock of any of the following materials?

		Yes	No
a.	Gauge	☐	☐
b.	Cotton	☐	☐
c.	Gloves	☐	☐
d.	Mask	☐	☐
e.	Caps	☐	☐
f.	Gowns	☐	☐
g.	Aprons	☐	☐
h.	Eye shield or goggles	☐	☐
i.	Antiseptics	☐	☐
j.	Disinfectants	☐	☐

4. **In the last 6 months, have you been out of stock of any type of single-use syringes?** ☐ ☐

If yes, how many stockouts occurred? _____

5. **If yes, what was the length of the longest stockout?**

a. Less than 1 week
b. 1- 4 weeks
c. Over 1 month
d. Over 3 months
e. Don't know / Don't remember

6. In the last 6 months have you been out of stock of any blood draw equipment? **Yes** ☐ **No** ☐

7. **If yes, for how long in total? *(Circle the response)***

a. No, not in the last 6 months
b. Less than 1 week
c. 1- 4 weeks
d. Over 1 month
e. Over 3 months
f. Don't know/don't remember

8. What did you do during the stock out of injection / blood drawing devices? *(Circle the response. Multiple response possible)*

a) Stopped giving injections/ blood draw
b) Reused blood drawing devices

c) Sterilized used devices to be able to reuse them

d) Borrowed some from another nearby facility / another unit

e) Used a different size/gauge that was still in stock as a substitute for the one that was stocked out

f) Told patients to go buy one

g) The stock out only lasted a short time so it did not interfere with my work

h) Don't remember

i) Other (specify): _____

9. Is it possible to buy new syringes and needles in the community?

	Yes	No
10. In the last 6 months, did you re-use a used (disposable) syringe or needle on the same patient or another patient for giving injection or drawing blood?	☐	☐
	Yes	**No**
11. Did you sterilize them first before re-use?	☐	☐

12. If yes, how did you sterilize them? (*Circle response)*

1. Boiling them	☐	☐
2. Autoclave		
3. Other (specify):		

13. Did you ever have safety boxes in your facility?

14. If yes, in the last 6 months, have you been out of safety boxes at any time? *(Circle response)*	☐	☐

a) No, not in the 6 months

b) Less than 1 week

c) More than a week but less than 1 month (1-4 weeks)

d) Over 1 month

e) Over 3 months

f. Don't know / don't remember

15. During the last 6 months did you have any accidental needle sticks?	☐	☐

16. If yes, how many times? *(circle response)*

a. 1-2 times

b. 3-4 times

c. 5+ times

d. None

e. Does not remember

	Yes	No
17. If you had an accidental needle stick, were you provided with post-exposure prophylaxis (PEP)?	☐	☐
18. Have you received a full course (3 doses) of Hepatitis B immunization? If not, please explain why not: _____	☐	☐
19. **Are you aware of any diseases that can be transmitted by re-using a non-sterile needle or by a needle stick injury?**	☐	☐

20. What diseases are you aware of? *(Circle response)*

a. HIV
b. Hepatitis B
c. Hepatitis C
d. Other (specify)_____

21. Have you ever received training on the following?

▪ Infection prevention and control	☐	☐
▪ Injection safety	☐	☐
▪ Blood safety	☐	☐
▪ Other (specify)_____	☐	☐

22. How long ago was the training? *(Circle response)*

a) Less than 6 months
b) More than 6 months
c) Do not remember

C. Interview with the Facility Manager or Supervisor

		Always	Some times	Never	Don't know
1) **Are injectable vaccines and drugs supplied with adequate (matching) quantities of syringes and needles**?	For vaccination				
	For curative services				
	For contraceptive injection				

	Yes	No
2. Do you have an infection prevention and control committee in this facility?		

☐ ☐

3. If yes, how often does the committee meet? *(Circle response)*

- **a.** Monthly
- **b.** Alternative month
- **c.** Quarterly
- **d.** Bi-annually
- **e.** Annually

4. Do you have minutes of the last meeting available?
(*if available get a copy of the meeting minutes)*

☐ ☐

5. **In your unit/facility do you have a copy of infection prevention and control / injection safety policy or guidelines? *(If yes, ask to show you a copy)*** ☐ ☐

6. In your unit/facility do you have a copy of waste management guidelines? *(If yes, ask to show you a copy)* ☐ ☐

7. Do you find that you have to remind injection providers about injection safety? ☐ ☐

8. What are the most important things that you remind injection providers to do? *(Circle response. Multiple response possible)*

1. Use clean table/tray
2. Wash hands
3. Wear gloves
4. Use new, sealed needle and syringe
5. Remove needle from rubber cap of multidose vial after withdrawing each dose
6. Use clean barrier, if using ampoule
7. Clean patient's skin
8. Do not recap needle
9. Be careful of needle sticks
10. Immediately dispose of needles or use a needle remover
11. Do not overfill safety boxes
12. Check dosage of medications
13. Other (specify): _____

9. If you do not have an incinerator, what do you use for disposal of health care waste? ***(Circle response. Multiple response possible)***

1. Open burning on the ground
2. Open burning in a hole or in an enclosure

3. Burial
4. Dumping in a pit latrine or other secure hole (pit)
5. Dumping in an unsupervised area
6. Transportation for off site treatment
7. Other (specify)_____

10. If you have an incinerator, what do you do when the incinerator is not working? ***(Circle response. Multiple response possible)***

1. Open burning on the ground.
2. Open burning in a hole or in an enclosure
3. Burial
4. Dumping in a pit latrine or other secure hole (pit)
5. Dumping in an unsupervised area
6. Transportation for off site treatment
7. Other (specify)_____

11. **Overall**, what problems (if any) do you encounter with the disposal of health care waste?

1. No problems
2. Lack of fuel
3. Lack of incinerator
4. Unfilled safety boxes
5. Lack of land area for burial
6. Falling boxes during transport
7. Lack of safety boxes
8. Other (specify)_____

1. Have you trained your health care waste handlers?

2. Other (specify)_____

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For more information, please visit www.jsi.com.

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