Safe Injection Global Network (SIGN) and National AIDS Control Programme Managers in Africa

Report of the Pre-ICASA Conference Satellite Meeting on Injection Safety and Infection Control

18-20 September 2003

Safari Park Hotel, Nairobi, Kenya
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Executive summary

Unsafe health care practices contribute to the spread of HIV and other bloodborne pathogens

A number of health care procedures may lead to the transmission of HIV to patients, health care workers or the community at large. These include (1) transfusion of infected blood, (2) unsafe injections and (3) other skin-piercing procedures performed in the absence of universal precautions. Thus, safe health care services should offer to their users (1) a selection of blood donors, testing of blood units, appropriate clinical use of blood, and when applicable, viral inactivation of human material for therapeutic use, (2) safe and appropriate use of injections – which includes sharps waste management - and (3) procedures conducted according to universal precautions.

Health care-associated HIV infections and other bloodborne pathogens can be prevented

Interventions to prevent these health care-associated infections are available, effective and highly cost-effective. The transmission of HIV infection in health care settings can be prevented with only a modest shift in the assignment of resources, for two reasons. First, blood safety, reduction of injection overuse and injection safety are not costly interventions. Second, the majority of HIV infections worldwide are caused by unsafe sexual practices. While the emphasis of HIV prevention programmes should remain on preventing sexual transmission, efforts to make health care safer should not be neglected.

Strengthening health systems to prevent HIV infections

HIV prevention and care programmes should participate and spearhead interventions for safer health care within cross-cutting health care-strengthening initiatives. This can be achieved through (1) communication and behaviour change, (2) provision of single use injection devices and infection control supplies and (3) safe health care waste management. Global alliances of stakeholders, including the Safe Injection Global Network (SIGN) can assist in the creation of national infection control coalitions. The Global Fund to fight AIDS, Tuberculosis and Malaria as well as the World Bank “Multi-country AIDS Programmes” (MAP) and other funding partners provide an opportunity for countries to finance and scale up interventions through the provision of essential equipment and supplies. Through that approach, everyone will become involved so that the current initiative for “access to care” can become an initiative for access to safe health care.
Introduction

Objectives and expected results

Evelyn Isaacs
WHO, AFRO, Harare

The objectives of the pre-conference satellite meeting on infection control, including injection safety were to:

1. Exchange information with participants of the Safe Injection Global Network (SIGN) and HIV/AIDS programme managers on Infection Prevention and Control (IPC);

2. Encourage countries in sub-Saharan Africa to address infection control including safe and appropriate use of injections in their prevention and care initiatives;

3. Brief programme managers and other stakeholders actively involved in HIV prevention and care programmes in sub-Saharan Africa on the simple steps to prevent nosocomial infections particularly HIV/AIDS through (a) infection control and (b) safe and appropriate use of injections.

Challenges in infection prevention and control

Emil Asamoah-Odei
WHO, AFRO, Harare

This meeting was unique, in that for the first time, it brought together safe injection programmes and HIV/AIDS programmes and that it addressed not only injection safety but also broader infection control issues.

The modes of transmission of HIV in health care settings are now well identified

In health care settings, HIV may be transmitted to (a) patients through transfusion of HIV infected blood, unsafe injections, reuse of contaminated instruments or needles and to (b) health care workers through injuries from needles or other instruments and splashes. Infection can also be acquired following a contact with an infected health care worker, although this is less common. The UNGASS Declaration of June 2001 called for the implementation of universal precautions in health care settings to prevent transmission of HIV infection by 2003 and to implement a wide range of prevention programmes by 2005, including provision of sterile injecting equipment and safe blood supply.

Weak health systems facilitate health care-associated HIV infections

Factors that facilitate the spread of HIV in health care settings include inadequate blood transfusion services, the lack of infection control policies, guidelines and training, the lack of Infection Control Committees, inadequate availability of equipment and supplies and the lack of monitoring systems. In addition, often, health care workers lack knowledge, have inappropriate attitudes towards infection control and engage in behaviours that may expose their patients to risks. Finally, there is an excessive consumer and provider demand for injections.

The challenges to meet to prevent HIV infection in health care settings

Together with other programmes (e.g., viral hepatitis prevention programmes), HIV prevention and care programmes are faced with the challenges of expanding safe blood transfusion services, developing infection prevention and control policies, coordinating institutions and mechanisms, developing human resource capacity, introducing new technologies, mobilizing resources, strengthening surveillance, intensifying public
education, creating an enabling policy environment and bridging the gap between the HIV/AIDS community and the infection prevention and control community.

Challenges in injection safety

Ousmane Dia
WHO, AFRO, Harare

Managerial challenges remain to ensure commitment of all partners

Activities in injection safety focus mainly on immunization. There is a need to involve other departments of the Ministries of Health and others, including Ministries of Finance and Inter-agency Coordinating Committees (ICCs). The private sector must not be forgotten. Training and supportive supervision is needed for all health workers.

Technology challenges remain to introduce safer or more efficient technologies

Auto-disable syringes are being introduced in immunization services. However, the target of exclusive use of auto-disable syringes in immunization services proposed by the WHO/UNICEF “Bundling” policy statement in unlikely to be met. Technology transfer in Africa may be useful in increasing the availability of auto-disable syringes and safety boxes on the continent.

Logistical challenges remain to ensure that the right products and equipment are available at the right place and at the right time.

Storage, distribution as well as waste collection and management require a logistical support that is often insufficient.

The initial meeting of the Chinese injection safety coalition, Beijing, November 2002
Objective 1: Exchange information between partners

Progress since the last SIGN meeting

Yvan Hutin
WHO, Headquarters, Geneva

An international environment favourable to the injection safety initiative

Many of the objectives set at the SIGN meeting 2001 have been reached (Table 1). The international environment is favourable to the injection safety initiative. We now have a solid evidence base to document poor injection practices, their determinants and their consequences, advocacy efforts resulted in a high level of awareness, the SIGN alliance has a stronger focus towards countries, tools are now available for policy management and experience in pilot countries is indicating the way forward.

Injections are still unsafe in developing and transitional countries

The capacity to use assessment data to make decisions is still limited, there is a limited consumer demand for safety in many countries (e.g., South Asia), the work of the SIGN alliance is solely focused on injection safety, the WHO tools are not yet widely used and no countries have ever implemented a fully scaled-up plan for the safe and appropriate use of injections.

Identifying the steps and processes to scale up injection safety interventions

SIGN participants must facilitate the use of data for local decision-making, educate about the risks associated with unsafe injections through HIV prevention and care programmes, build up a broader infection control culture, disseminate the WHO policy management tools in countries and identify the steps and processes of the scaling up.

Educating for the safe use of injections in the informal private sector of Karachi, Pakistan
<table>
<thead>
<tr>
<th>Action point</th>
<th>Status</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical “Injection safety planning aid”</td>
<td>Achieved</td>
<td>“Managing injection safety” and costing tool</td>
</tr>
<tr>
<td>Policy statements by professional associations</td>
<td>Achieved</td>
<td>International Council of Nurses (ICN)</td>
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<tr>
<td></td>
<td></td>
<td>World Medical Association (WMA)</td>
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<tr>
<td>Improved mechanism for setting standards</td>
<td>Achieved</td>
<td>Draft ISO standards for immunization auto-disable (AD) syringes available</td>
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<td></td>
<td></td>
<td>ISO standards for curative auto-disable syringes in preparation</td>
</tr>
<tr>
<td>Policy for better access to injection equipment</td>
<td>Achieved</td>
<td>WHO guiding principles on injection equipment security</td>
</tr>
<tr>
<td>Assistance to AD syringes introduction</td>
<td>Achieved</td>
<td>“V&amp;B” document</td>
</tr>
<tr>
<td>Waste management option database</td>
<td>Achieved</td>
<td>30 new options added to the database</td>
</tr>
<tr>
<td>Advocacy kit</td>
<td>Achieved</td>
<td>&quot;First do no harm&quot; brochure and CD-ROM</td>
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<tr>
<td>National SIGN coalitions</td>
<td>In progress</td>
<td>New coalitions in China, Bangladesh, Guinea and Uganda</td>
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<tr>
<td>Health care worker protection working group</td>
<td>Partially achieved</td>
<td>Global Burden of Disease estimates, “Aide Mémoire” and pilot project</td>
</tr>
<tr>
<td>SIGN working groups in WHO regional offices</td>
<td>Partially achieved</td>
<td>Focal point in WPRO. Other regional offices in the process of being organized</td>
</tr>
<tr>
<td>Better communication with IASIT</td>
<td>Achieved</td>
<td>Collaboration for all key documents, including technology transfer</td>
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<tr>
<td>Synergies with other programme areas</td>
<td>Achieved</td>
<td>Mainstreaming of injection safety within HIV, essential drugs, immunization and environmental health</td>
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<tr>
<td>Progress towards plastic recycling</td>
<td>In progress</td>
<td>Pilot projects initiated</td>
</tr>
<tr>
<td>Joint resource mobilization efforts</td>
<td>Not achieved</td>
<td>Unclear whether this is feasible</td>
</tr>
<tr>
<td>Pilot projects on AD syringes introduction</td>
<td>In progress</td>
<td>First projects being initiated in Africa and Asia</td>
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<td>Quantification of the importance of illegal recycling</td>
<td>In progress</td>
<td>Study in progress in Pakistan</td>
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<td>National Regulatory Authority assessment tool</td>
<td>Achieved</td>
<td>First assessment just completed in China</td>
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<tr>
<td>Option paper on waste management</td>
<td>In progress</td>
<td>New full time focal point hired by WHO</td>
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<td>Local production of sharps containers</td>
<td>In progress</td>
<td>Countries reporting local production</td>
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<tr>
<td>Environment-friendly syringes</td>
<td>Not achieved</td>
<td>Objective needs to be clarified</td>
</tr>
<tr>
<td>Engagement of environmental stakeholders</td>
<td>Not achieved</td>
<td>Unmet need</td>
</tr>
<tr>
<td>Centralized waste management</td>
<td>In progress</td>
<td>New full time focal point hired by WHO</td>
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Coalition for Infection Prevention in East Central and Southern Africa

Pamela Lynam, JHPIEGO, Johns Hopkins University, Nairobi
The importance of infection prevention and control

Infection prevention and control is an issue of basic rights and quality of care. It is essential to many programmes, including reproductive health, family planning and HIV/AIDS prevention and care. Preventable hospital infections are a major cause of morbidity and mortality worldwide, causing hepatitis B and other dangerous emerging pathogens, including viral haemorrhagic fevers and SARS.

Proposed actions for infection prevention and control

First, it is important to recognize the importance of good infection control, including injection safety. Second, regular updates are necessary so that state-of-the-art best practices can be based on the latest evidence. Third, a consensus is required on the basis of agreement on policies, standards, norms and service delivery guidelines. Fourth, national plans using a performance improvement approach should start with the adaptation of policies, standards and guidelines. This will serve as a basis to train health care workers in service and to train trainers, including nursing school tutors and medical school lecturers. Advocacy is essential to the identification of financial resources. Resources are available for advocacy materials (e.g., WHO, CRHCS, JHPIEGO), evidence base (e.g., WHO / JHPIEGO), guidelines, standards and service delivery guidelines (e.g., WHO / CRHCS / JHPIEGO), training materials (e.g., RCQHC / JHPIEGO).

The coalition for East, Central and Southern Africa

The coalition for infection prevention in East, Central and Southern Africa include Ministries of Health, WHO / AFRO, the Commonwealth Regional Health Community Health Secretariat (CRHCS), RCQHC, JHPIEGO and USAID / REDSO. To date, the coalition built on work already under way with WHO/AFRO and CRHCS and on JHPIEGO work in operational guidelines and training materials. A regional workshop was organized in Kampala. Next steps include implementing country plans, harmonizing regional training materials and packages and developing simple orientation package for frontline health care workers.

AFRO support to countries on infection control

Evelyn Isaacs,
WHO, AFRO, Harare

The six country initiatives and its objectives

To implement the resolution passed at the 32nd conference of Health Ministers in the year 2000 spearheaded by the Commonwealth Regional Community Health Secretariat (CRCHS), AFRO supported six countries for infection control in the context of HIV/AIDS programmes. The objectives of the technical support mission include (1) conducting assessments, (2) discussing implementation plans with key policy makers, stakeholders and international partners, (3) developing the WHO/CRHCS regional manual on infection prevention and control (IPC) policies and guidelines, (4) develop the IPC training curriculum, (5) build the capacity among technical teams, (6) adapt the WHO/AFRO/CRCHS generic manuals, (7) assist countries in developing a comprehensive national strategy and action plan as a component of the National Health Sector Plan.

Identifying risk factors that may contribute to the spread of HIV infection in health care settings

Major findings in health care settings relating to the risk of HIV and other bloodborne infections include:

1. About 50% of collected blood is not tested either for HIV, HBC, HCV or syphilis;
2. Lack of knowledge of policies and guidelines and safe injection practices;
3. Health care workers do not report needle-stick injuries;
4. Careless behaviours in handling needles and contaminated materials that result in percutaneous injuries;
5. Improper disposal and handling of sharps noted in all countries visited.

**Future plans for countries and WHO**

Future plans in countries include assistance with advocacy, assessments, joint planning with partners and mobilization of resources and personnel for national programmes for infection prevention and control and development of monitoring, evaluation and reporting systems. Future plans for WHO include continuation of the normative role in supporting operational research, adaptation of policy guidelines and training curricula, communication, experience sharing in the area of best practices, assistance to resource mobilization, development of surveillance and health care worker safety programmes, publishing and translating into French and Portuguese the WHO standard package and collaborating with partners for harmonization of the regional training materials in infection prevention and control so that practices can be standardized.

**AFRO technical support to countries in the area of injection safety**

Ousmane Dia,
WHO AFRO, Harare

**Country support from AFRO to countries**

AFRO is actively involved in assisting countries in the switch to auto-disable (AD) syringes that represent the safest option in immunization services. This switch creates new challenges in sharps waste collection and management. In the area of waste collection, two options are available. The current best practice remains immediate collection of used needles in sharps boxes. However, options in terms of needle removal are being explored. In the area of waste management, a particular focus is placed on facilitating a process of micro-planning at the district level.

**Future plans for 2004-2005**

Future plans for 2004-2005 in immunization will include (1) the promotion of the WHO/UNICEF bundling policy statement, (2) the support to integration of immunization into broader activities, (3) country support through review of action plans, (4) support to waste management and introduction of new technologies and (5) promotion of national environmental regulations on waste management.

**Country progress towards infection prevention and control and injection safety**

**Progress towards safer injections in China**

Wen Yi,
China CDC, Beijing, China

In China, injection practices are heterogeneous, reflecting the differences in human and social development across the country. In view of the various settings, only few assessments have been conducted to document injection practices. The Chinese Field Epidemiology Training Programme (C-FETP) coordinated two injection safety assessment at county level that illustrated the differences among different areas. With more and more recognition of the situation at the national level, the Ministry of Health is moving towards a national injections safety policy. In specific project areas, all immunization will now be administered with auto-disable syringes, with partial
support from the joint China / Global Alliance on Vaccine and Immunization (GAVI) programme. In November 2002, a national alliance was constituted to call for universal injection safety in the People’s Republic of China. The regulatory framework includes a law for the prevention and control of infectious diseases and a law for the prevention and control of solid waste environment pollution. Finally, 56 counties in 11 provinces of China are the focus of a US$ 100 million proposal to the Global Fund to support fighting against HIV/AIDS, including adequate preventive services and safe injections.

On the basis of evidence, Bangladesh chooses to abandon sterilizable syringes and to adopt auto-disable syringes

Abdur RASHID,
Ministry of Health, Dhaka, Bangladesh

Bangladesh used sterilizable injection equipment for immunization services. However, when the Global Alliance on Vaccine and Immunization (GAVI) offered support for the introduction of universal hepatitis B immunization in the country, the Ministry of Health examined the injection safety policy to determine whether a change of the type of injection equipment needed to occur. To base decisions upon evidence, a national injection safety assessment was conducted in 2002 using the standardized WHO tool to evaluate injection practices. Results of this assessment indicated that the central sterilization system had weaknesses that made it difficult to ensure injection safety. Using this information, a national policy workshop was held in Dhaka, Bangladesh in March 2003. The new national policy now calls for the use of auto-disable injection equipment immediately in immunization services and as soon as possible in curative services. The national policy also formulates guidance for behaviour change and sharps waste management.

From a rapid assessment to a national plan of action in Cambodia

Koum Kanal,
Ministry of Health, Phnom Penh, Cambodia

Past efforts to improve injection practices in Cambodia were limited to the Expanded Programme on Immunization (EPI). Activities included the switch from sterilizable to auto-disable syringes and the introduction of sharps boxes and incinerators for the management of sharps waste. To expand efforts to the broader curative sector, the Ministry of Health conducted a rapid assessment of injection practices in December 2002. The results of the assessment indicated a high level of injection overuse, particularly in the private sector. However, reuse of injection equipment was not observed. Setbacks were also identified in the area of sharps waste management. To turn data into policies, a national workshop was held in May 2003 and recommended a national plan of action to work on (1) behaviour change (mainly to reduce injection overuse), (2) provision of equipment and supplies and (3) sharps waste management (to build on the system put in place for immunizations). A costing exercise was conducted to estimate the amount of financial resources needed to scale up this policy. This will facilitate fundraising efforts so that the plan can be implemented.

Reducing injection overuse in Pakistan

Aqil HUSSAIN,
HOPE, Karachi, Pakistan

The informal private sector accounts for a high proportion of health care services delivery in the over-populated urban areas of Karachi, Pakistan. In this environment, injections are overused to administer medications and reuse of injection equipment is common. In Indonesia, an intervention called “interactional group discussion” was successful in reducing injection overuse through improving communication between prescribers and patients. To determine whether this intervention could be replicated in Pakistan, HOPE initiated interactional group discussions in Karachi in 2003. As in
Indonesia, the interactional group discussions consisted in moderated discussion between prescribers and patient, so that the provider could be confronted to the absence of preference for injections among users. Preliminary results of the discussions suggest that in Karachi as in Indonesia, patients trusted providers to choose a mode of administration and did not necessarily prefer injections. A final evaluation of the intervention and control groups is scheduled for late 2003 and will determine whether the intervention was successful in reducing the proportion of outpatient visits followed by an injection.

Advocating to achieve standards in Malawi

Ann Maureen PHOYA,
Ministry of Health, Lilongwe, Malawi

In Malawi, a country highly endemic for HIV infection, an infection control project was initiated with the support of WHO/AFRO and CRHCS. As a first step, policies were adapted for the country. Second, an assessment identified the gaps in infection prevention and control activities. Third, an implementation plan formulated to train staff and provide equipment and supplies. Monitoring and evaluation was included in the accreditation process and included a reward system. Stakeholder involvement and a participatory methodology for standard development were important for acceptance and compliance with standards. Organization of the standards in an operational way, following the steps of service delivery processes, eased their adoption by facility staff, thus minimizing the need for external support. The utilization of a change management strategy that included aspects such as leadership development, resource mobilization, incentives, feedback and team work from the beginning was essential. The use of standards led to provider empowerment and sense of control. Policy level support was important at every step of the process. Issues to consider include the continued motivation of staff that is a challenge, involving clients and community in an effective and interactive way to ensure relevance of national standards to community needs and the use of standards as a self-administered tool to ensure continued application of the national standards on the job. Next steps will address a complete ongoing process evaluation to learn lessons for expansion, as well as the expansion of this model to all other hospitals within Malawi and as pilot projects at the health centre level and the development of a public dissemination campaign to promote quality services in the community. JHPIEGO supported the development of operational standards as well as the monitoring of implementation of the standards in selected hospitals of the country.

The national infection control programme in Egypt

Maha TALAAT,
NAMRU 3, Cairo, Egypt

Initial assessment of infection control and injection practices conducted in 2000 in Egypt indicated that the basic infection control concept was not well recognized in health care in Egypt. Injections were overused – particularly in the private sector – and were sometimes given with injection equipment reused in the absence of sterilization. As a follow up, a programme was initiated for (1) the promotion of infection control in health care facilities, (2) the promotion of injection safety and infection control in primary care settings and (3) the promotion of injection safety at the community level. Interventions were based upon standard development in association with a communication/behaviour change strategy that included a cascade training scheme. An infection control training curriculum targeting infection control teams was developed. The training course is a series of one week courses over a six-month period. It covers standard precautions and infection control in high risk settings. The course was piloted for 80 trainees using international faculty members. The development of Information, Education and Communication material was the focus of special efforts that included substantial pilot testing with target audiences. TV and radio spots were produced and aired free of charge by the public television. Interactive theatre was also used. An incentive programme awarded special recognition during a ceremony with the
governor of the governorate for health care facilities that were particularly successful in their waste management programmes. Future plans include an evaluation of the pilot programme.

**Government input to move from policy to plan of action in Mauritius**

G. SAMNATH  
Ministry of Health, Port Louis, Mauritius

As a result of the technical support provided by WHO/AFRO, the Government included in the national health sector budget funds for the development of the IPC programme. The measures and steps taken in infection prevention and control include the formation of national and regional Infection Control Committees, the development of national policy, with handbooks and guideline protocols, the implementation of awareness / training programmes as well as surveillance using epidemiological and microbiological methods. Equipment and supplies were provided and waste was managed using a colour code. The next step is the laboratory improvement for screening and testing blood.

**Assessing the quality of injection equipment in Pakistan**

Arshad Altaf  
Safe Injection Network (SIN), Karachi, Pakistan

The Safe Injection Network is conducting an assessment to estimate the public health importance of illegal reprocessing / repackaging of injection equipment. During phase I of the project, syringes and needles were purchased throughout the country from various retailers. To date, 300 unique samples were collected and examined. Syringes were available in blister and plastic packaging. Plastic packaging is commonly termed “Polypack”. Descriptive analysis was conducted to estimate the proportion of syringes presenting various characteristics. Preliminary analysis suggests that the quality is heterogeneous, with syringes and needle sets obviously not matching the ISO standard, particularly those sold under the “Polypack” packaging. While no final criteria is available to determine whether a syringe may have been illegally reprocessed and repackaged, some sets are clearly manufactured with sub-optimal quality standards (e.g., presence of particles such as pieces of hair in the packaging). As an outcome of phase I, a checklist by which syringes and needle sets can be assessed for quality according to the ISO standard 7886 has been developed. During the upcoming phase II of the assessment, a representative sample of retailers and health care facilities will be studied to estimate the relative proportions of syringes that fit into four quality categories.

**Technology transfer for the production of auto-disable syringes in Viet Nam**

Le Thi Minh CHAU  
Mediplast, Hanoi, Viet Nam

Mediplast was established in 1998 to produce medical plastic disposable devices and medical products, including single use syringes and needles. To address concerns expressed over the risk of reuse of single use injection equipment, Mediplast examined various options to produce auto-disable syringes. In February 2001, after discussions with several manufacturers and design holders, Mediplast decided for one technology option and adapted its production line. The first batch of immunization auto-disable syringes was produced in 2002.

**Ensuring the quality and safety of injection devices**

Sophie Logez  
WHO, Geneva
Ensuring quality assurance for single use injection devices

The pre-market phase of injection devices includes conception, design, manufacture, packaging and labeling. At this stage, norms and standards regulate the product. Standards guarantee effectiveness, ensure quality and provide safety. Standards are voluntary while regulations are mandatory. The ISO standards for single use syringes and needles describe characteristics for general safety and performance of the product. The International Organization for Standardization (ISO) agreed to work on a new standard for hypodermic syringes with a reuse prevention feature for general purpose (projected ISO standard 7886-4), while the committee is finalizing the draft standard for AD syringes for immunization that is labeled ISO 7886-3, “Sterile hypodermic syringes for single use – part 3: Auto-disable syringes for fixed dose immunization.” In the absence of ISO standards, WHO will provide procurement specifications and laboratory test procedures, but will refer to ISO standards when available. Only a limited number of countries have established national regulations for medical devices. The five founding members of Global Harmonization Task Force (GHTF) have medical device regulations that can be used as a basis for pre-qualification by WHO. By developing quality control and reinforcing medical device regulations, more countries will be able to maximize the benefits to the patient so that injection use can be appropriate and consistent with an approach that minimizes the risks.

Proposed WHO pre-qualification procedure for the procurement of injection devices by United Nations agencies

WHO and other United Nations (UN) agencies, as potential supply agencies for developing countries, may have a role in procuring single use injection devices. The purpose of the quality assessment for single use injection devices is to verify that injection devices meet the specifications of the relevant UN agencies and are produced and controlled in accordance with product standards or WHO procurement specifications and quality system standards recommended by WHO. The assessment will determine reliable sources of procurement of single use injection devices to ensure quality and to guide other UN agencies in sourcing of such devices. The quality assessment procedure is based upon three main principles, (1) conformity with the UN agencies’ specifications and ISO product standards and/or WHO template specifications; (2) documentation of the quality system in place for production of medical devices, through compliance with acceptable quality system standards and (3) monitoring by WHO, in collaboration with the manufacturers, of verified complaints from the field and/or from UN agencies. At present, the proposed procedure relies mostly on the regulations formulated by the five founding members of the Global Harmonization Task Force (GHTF), as most developing countries do not have national regulations for medical devices. By 2004, WHO will assess all manufacturers who wish to have their products pre-qualified for procurement of single use injection devices by UN procurement agencies. The conformity of auto-disable syringes selected according to WHO procurement specifications will still be tested by WHO accredited laboratories until the ISO standard is finalized and approved.

Suggestions from the International Association for Safe Injection Technologies (IASIT) on the role of WHO in technology transfer and technology implementation activities

William Dierick
IASIT, Geneva, Switzerland

Suggestions from IASIT to WHO on the proposed terms of references of WHO in technology transfer activities

WHO drafted terms of reference for its role in technology transfer activities (i.e., set-up of production of auto-disable syringes in developing countries). As a WHO partner and at the request of WHO, IASIT wishes to make suggestions on these terms of references. IASIT views WHO as a promoter of safe technologies and as a resource to introduce
such technologies. WHO also needs to assist countries ensuring quality while preserving free trade without discrimination.

**Suggested objectives of WHO's role**

WHO role in technology implementation and transfer activities could include (1) assisting Ministries of Health in making decisions regarding granting licenses to produce locally and (2) supporting governments in ensuring technology implementations that enforce international recognized norms and standards. Activities could include assessments, advocacy, contact facilitation through IASIT and quality assurance. However, IASIT proposes that WHO should not participate in any commercial or industry discussions or negotiations.

**Reuse prevention injection devices for the curative sector**

Lillian Salerno  
IASIT, Geneva

**Industry’s commitment to address the safety needs in the curative sector**

IASIT members include manufacturers, developers and individuals committed to promotion and proliferation of safe injection technology, prevention of syringe reuse and promotion of safe injection practices. Syringes with reuse prevention features are designed to addressing curative injections that account for 90% of the injections given. Advanced technologies include retractable, self-locking and active disabling syringes. Nine manufacturers already have auto-disable syringes for immunization services. In the curative sector, five devices are now commercially available at affordable prices and six other devices are soon to be launched.

**A IASIT’s initiative for injection safety**

As part of the IASIT initiative for injection safety, the industry sponsored workshops for Africa, supported African Ministries of Health with samples of current technologies, provided support for safe injection technologies, and developed education and training material. In addition, the industry is actively engaged in advocacy for U.S. funding for HIV prevention including syringe reuse prevention.

**Evaluation of needle removal devices in India**

Matthew Steele, K.A.Balaji and Satish B. Kaipilyawar  
PATH, Seattle, New Delhi and Hyderabad

**Removing needles as a waste management option**

Needle removal serves the purpose of separating the syringe from the needle and sometimes of rendering the body of the syringe unusable. This procedure reduces the volume of hazardous sharps and makes the handling of used syringes safer. Potential advantages include a reduction of sharps volume by 90-99%, a reduction of the risk to the community from improper disposal, a reduction of the overall waste volume by 20-60%, the possibility to fit years worth of needles in a protected needle pit and the ability to fit more syringe bodies in each disposal box. Potential drawbacks include cost (unit cost of the device ranging between $10-$50), the need for removal devices wherever injections are given, the extra step added to the injection process, the need to re-supply needle containers and the possibility of device malfunction.

**Evaluating needle removal in the field**

The objectives of the evaluation included the assessment of performance, the assessment of acceptability, the effect of needle removers on sharps waste volumes, the frequency of needle-stick injuries and the feasibility of widespread adoption.
This trial is being conducted in three different locations in India – New Delhi, Jaipur and Mehboobnagar (Andhra Pradesh) - using three types of needle removers (the PATH-SafeCut, the PATH-Needle Puller and the BALCAN device). The study has already begun at seven test sites and two control sites in New Delhi and Jaipur in May 2003 and will begin in Mehboobnagar in October 2003 and will include 250 health facilities. The scope and methods of the study include a total of 390 health workers serving a population of 2.62 million and the collection of observation, health care worker interview and focus group discussion data from all participants. Preliminary results from Delhi and Jaipur indicate that on the basis of >5 100 person-days of use (i.e., >34 000 needles removed), three needle-stick injuries occurred (two prior to injection and one during disposal). Removed needles were disposed of in protected pits in Jaipur and collected by the common waste treatment facility in Delhi.

The ongoing trial in Delhi and Jaipur has already demonstrated the acceptability and feasibility of use of needle removal devices by health care workers in clinical and outreach settings in resource-limited settings. Additionally, the introduction of novel waste disposal in pits (in Jaipur) and segregation of needle waste for transport to central facilities (in Delhi) has been implemented efficiently in urban and peri-urban settings. Further research and intervention efforts are necessary and need to focus on changing behaviours related to batching and recapping used needles and to creation of formal reporting systems for needle-stick injuries and further articulation of safe systems of disposal.
Waste management assessments conducted in Africa in 2003

Adama Sawadogo,
WHO, Abidjan, Cote d'Ivoire

Driving improvements in waste management through systematic assessments

AFRO conducted a number of waste management assessments in 2003 to (1) review the national policies and strategies in immunization services within the context of health care waste management and to (2) make proposals to improve waste management. The assessment focused on a number of indicators reflecting (a) the availability of a policy and plan of action, (b) awareness of risks, (c) segregation, (d) adequacy of containers at generation points, (e) adequacy of storage, (f) adequacy of treatment and (g) adequacy of post-treatment disposal. A positive aspect was the awareness of the risks. Main issues included insufficient comprehensive policy and plans of action all over the stream from generation to disposal, insufficient segregation of waste, absence of appropriate containers and the bad quality of waste treatment and disposal.

Assessing the performance of small scale incinerators

AFRO also assessed the performance of small scale incineration to pave the way for policy recommendations, product specifications and development of appropriate equipment and user guidelines. The scope of the assessment included operational issues, performance issues, technical compliance, constraints and management issues. The findings suggested that the absence of formal waste management infrastructures was a problem with various consequences that included the lack of clear directives, undefined responsibilities, the absence of waste management budgets, inadequate maintenance and insufficient training. The ownership of the incinerators was unclear, adding the difficulty of assignment of responsibilities.

Evidence-based recommendations for waste management in Africa

On the basis of the assessment, the following recommendations were proposed:

1. Set up a safety committee of stakeholders to review policy and disposal system options and ensure a commitment for safe waste management;
2. Assess injection safety and waste management practices, waste disposal needs and existing waste disposal capacity (e.g., hospital incinerators);
3. Prepare and implement plans district by district for injection safety and safe waste management;
4. Implement effective supervision of injection safety and waste management;
5. Budget and finance waste management activities;
6. Include waste management monitoring and evaluation in routine monitoring activities.
A competition on innovative technologies for the treatment of health care waste

Recognizing the health and environmental problems associated with incineration, Health Care Without Harm (HCWH) sponsored an international contest on cleaner, low-cost medical waste treatment technologies for rural facilities. Pilot tests of these technologies are ongoing. HCWH is working with WHO and the United Nations Development Program to promote best practices and techniques for reducing health care waste in seven countries. Thirty contestants representing universities, engineering teams, consultants, health institutions, NGOs and environmental advocates from 18 countries were selected. Awards were given to eight winning designs including portable solar-powered autoclaves, boiling chambers with manual grinder and compactor, lime treatment and encapsulation and a small autoclave with internal shredding. Designs are in the public domain and available at www.medwastecontest.org.

Pilot testing and demonstrations: Work in progress

An autoclave heated by a solar collector and two manual sharps grinder designs and a solar-heated treatment box modeled after a solar cooker are being tested in India and will be field tested at a rural hospital or clinic. Physicians for Social Responsibility (PSR) in Kenya will test a technology and is considering the boiling chamber design. Yonge Nawe Environmental Action Group may be testing the portable solar autoclave in Swaziland. A test protocol for microbial inactivation efficacy has been developed. Any parties interested in implementing the contest results are welcome.

The NGO Srishti (India) prepared a report (available from HCWH) on an existing centralized autoclave shredder system in India. Reusable metal sharps containers are collected from rural outreach sites and transported to the hospital where they are treated in an autoclave. The treated sharps are then shredded and emptied into a tub of water where floating plastic parts are scooped up for recycling and metal pieces at the bottom are buried. The system has been in operation since 1994.

GEF Project: Promoting best practices and techniques

In June 2003, the Global Environmental Facility (GEF) approved a project called “Demonstrating and promoting best practices in reducing medical waste to avoid environmental releases of dioxins and mercury from health care practice.” The project involves the United Nations Development Programme, WHO, HCWH as well as governments and NGOs in Argentina, India, Lebanon, Philippines, Poland, Senegal and Viet Nam.

As OECD countries have been shutting down medical waste incinerators to reduce global releases of dioxins and mercury, developing countries and countries in transition appear to be moving in the opposite direction as new medical waste incinerators are being built, often with little or no pollution control. The GEF project addresses this disturbing trend. A framework for action emerged from a consensus process involving stakeholders meeting in New Delhi, India on February 2003. The framework is based on a strategy to promote and implement best environmental practices and best available techniques for the management of health care waste. The key elements of the framework are the development of model facilities with the goal of replicating the programme at other facilities, building institutional capacity including management systems and structures, awareness-raising, training and education at the local and national levels, sustainability and regional information dissemination. A paper
prepared by HCWH based on the GEF concept document, a status report on the pilot testing and demonstrations and the Srishti report are available from HCWH.

The WHO pre-qualification procedure will ensure that injection devices meet international product and quality system standards.
Objective 2: Including infection prevention and control in HIV programmes

The working group on safe health care and HIV/AIDS

Eric Friedman and Bridget Canniff Fellini
Physicians for Human Rights / Global Health through Education, Training and Service (GHETS)

A new group to prevent health care-associated HIV infections

The Safe Health care and HIV/AIDS Working Group was formed in April 2003. Its members include Physicians for Human Rights (PHR), GHETS and individuals from several USAID contractors, non governmental organizations (NGOs), international organizations, injection technology manufacturers, organized labour as well as individual researchers and consultants. Its mission is working to end the transmission of HIV, hepatitis B virus, hepatitis C virus and other bloodborne pathogens through unsafe health care. The activities of the working group are based upon the principle that respect for human rights must underpin all responses to HIV/AIDS and that the right to safe health care is held by all people, everywhere.

Goals of the working group

The working group has three main goals: advocacy and resource mobilization, promotion of best practices and information sharing. In the area of advocacy and resource mobilization, the group is encouraging countries to include safe health care in proposals to the Global Fund to Fight AIDS, Tuberculosis and Malaria and will assist them in doing so; advocating for United States government funding to support safe health care; and advocating for WHO and UNAIDS to develop plans to meet UNGASS safe health care goals and recognize the safe and appropriate use of injections as a core component to the health sector’s response to HIV/AIDS. In the area of promotion of best practices, GHETS developed a questionnaire on provider training and public education interventions, and the group endeavours to share best practices and national strategies for safe health care. Finally, in the area of information sharing, the group will bring together diverse stakeholders to share ideas and strategies. There is a need to internationalize working group membership to encourage exchange on a global level and to ensure that the work is consistent with priorities identified by those working to improve health care safety. New partners are welcome.

The opportunity of the Global Fund to mobilize resources

The Global Fund to Fight AIDS, Tuberculosis and Malaria

The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) is a multilateral funding mechanism for prevention, care and treatment of AIDS, tuberculosis and malaria. Country coordinating mechanisms (CCMs) identify interventions for which countries seek funding. There is no ceiling on funding requests, so they can include safe health care without eliminating other components. So far, all technically sound proposals have been funded.

How safe health care fits into the Global Fund mandate

The Fund’s purpose is to manage and disburse additional resources that will make a sustainable and significant contribution to the reduction of infections, illness and death, thereby mitigating the impact caused by HIV/AIDS, tuberculosis and malaria. The scope of the Fund includes provision of critical health products, training of personnel and community health workers, and behaviour change and outreach. The Fund will also provide associated support for strengthening comprehensive commodity
management systems. Therefore, providing injection equipment and infection control supplies, professional training on infection control, and public education on injections all fit within the Fund’s mandate. The Fund’s foundational documents do not mention specific forms of HIV transmission, other than in footnotes. Most prevention interventions funded so far have focused upon sexual transmission and prevention of mother-to-child transmission of HIV, although a handful of countries are to receive funding for blood safety. Through the first two rounds, only Ethiopia has successfully applied for universal precautions, including injection safety.

Actions of the Safe Health Care and HIV/AIDS Working Group Project

The Safe Health Care and HIV/AIDS Working Group wrote to all CCMs in Africa (other regions to follow) encouraging them to include safe health care interventions and provided (1) explanation of importance of preventing HIV transmission in health care settings, (2) a short guide to technical tools and interventions to consider including in the proposal, (3) the Universal Precautions component of Ethiopia’s proposal, (4) a template for Global Fund proposal on injection safety and (5) human and other resources CCMs could contact for more information. However, the communications were sent too recently for the Working Group to evaluate their impact.

Next steps to secure funds for infection control and injection safety

Next steps for the working group will include (1) communications with Global Fund Secretariat and the Technical Review Panel, (2) letters to CCMs in regions outside Africa, (3) follow-up activities with African CCMs. All SIGN participants can help through interacting directly with national CCMs. Because there is limited experience so far, it is hard to predict success. However, there are reasons for hope. Ethiopia’s proposal was approved, even though national guidelines had not been finalized and even though it appeared that there was no overall infection control assessment. Success may depend on the soundness of the rest of the proposal. In the current third round, more than 50% of proposals are likely to be rejected as technically unsound. A possible strategy is to note that enabling health care providers to adhere to universal precautions may reduce health sector discrimination against people with HIV/AIDS, as the Fund favours proposals that will reduce discrimination. In a more general way, the Fund is in trouble. The Fund faces a $2-3 billion shortfall through 2004.

Experience with the Global Fund in Cambodia

Oscar Barreneche
WHO, Phnom Penh

Cambodia went through proposal submissions for the three rounds of the Global Fund. For the first two rounds, funds were awarded while a reply is expected for the third round which includes a proposal in support of the blood safety project. The CCM in Cambodia has 27 members with representation of all stakeholders, including the government, NGOs, bilateral donors, United Nations organizations and associations of people living with HIV/AIDS (PLHA). The Principal Recipient (PR) appointed to by the CCM to oversee the implementation of the projects funded by the Fund is the Ministry of Health. Putting into operation the PR and the CCM has not been easy due to the lack of clear guidelines by the Fund. However, after a lengthy process, the first disbursement of money for the implementation of the first round of projects arrived at the end of September, almost a year after the grant was approved. The mechanism of the Global Fund is adapted to the financing of supplies and consumables. It could be used for blood transfusion safety, injection devices and safety boxes. However international standards for procurement are pre-requisites. Thus, the WHO pre-qualification procedure for the purchase of injection devices could be a very useful tool when purchasing with GFATM money. The Fund also aims at facilitating procurement procedures and it gives the autonomy to the CCM and the PR to decide what is the most adequate and efficient mechanism for procurement, as long as it is in line with international quality standards. The Fund disburse resources to projects in a "results-
Based' strategy, which means that every six months, based upon the implementation of
the previously proposed semester plans, the PR will be able to continue to disburse for
another six months period. For this reason, strong monitoring and evaluation plans are
key to successful proposals and smooth project implementation. For this purpose, Fund
focuses on basic general “output” and “coverage” indicators. The SIGN participants
could facilitate the development of a list of standard indicators for injection safety,
infection control and blood safety that could be used by countries when building
proposals. Finally, as the Fund itself expressed concerns about raising the needed
funding for future rounds, it is recommended to use proposals to support scaling up
effective interventions for which mobilizing local resources is difficult rather than to use
it for existing interventions regularly funded by other well-identified mechanisms.

Mobilizing resources for infection prevention and control

Una Reid,
WHO consultant, Jamaica

A mission was organized by WHO/AFRO to (1) assist six countries to develop action
plans for the implementation of infection prevention and control, (2) discuss infection
prevention and control as a component of health systems development and to identify
focal points in the respective Ministries of Health and WHO country offices and to (3)
discuss infection prevention and control within the context described above with
donor/bilateral agencies. The results of these discussions are as follow:

The World Bank developed projects or had projects in progress on health facility waste
management in Tanzania and jointly with UNICEF in Malawi. The Tanzania project is
extensive and well developed and was slated to begin in July 2003. The Malawi project
is in development. Both projects welcome the WHO/AFRO/CRHCS Manual of
Infection Prevention and Control Policies and Guidelines, which contains policies on
waste management. Kenya has a small project on waste management, which is multi-
funded;

UNICEF also focused on safe injection practices, particularly in the area of
immunization services. A promise was made to discuss the issue of safe injection
practices in curative services at the inter-agency meetings;

UNAIDS (one office) promised that this office would advocate for funds for training
and duplication of the manuals;

WHO country offices promised to include infection prevention and control in their
respective country programmes and it will be budgeted for under health systems
development.

The scope of the infection prevention and control initiative is comprehensive and is seen
as essential to health systems development. While the future sources of funding may be
through HIV/AIDS projects, the choice would be to position it in its own right on the
agenda of funding agencies. The recommendation, therefore, is for the development of a
project on infection prevention and control and to mobilize resources accordingly.
Objective 3: Simple steps to take in infection prevention and control

Introduction to generic packages on injection safety and infection control

Policy document on injection safety

Ousmane Dia,
WHO AFRO, Harare

The support from the Global Alliance for Vaccine and Immunization (GAVI) to the introduction of auto-disable syringes in Africa is subject to the submission of a proposal that should include a national injection safety policy. For this purpose, AFRO developed a template national policy for injection safety to be adapted by countries. The template national injection safety policy has a number of sections, including introduction, policy statement, definition of a safe injection, description of the types of injection devices available, waste management, training, management and communication. It was designed for local adaptation in each country.

The AFRO toolkit for Infection Prevention and Control

Una Reid,
WHO consultant, Jamaica

The toolkit developed by AFRO includes (1) an assessment tool, (2) the WHO/AFRO/CRHCS Manual of Infection Prevention and Control Policies and Guidelines (including a CD), (3) the WHO/AFRO/CRHCS Infection Prevention and Control Training Programme Curriculum (including a CD), (4) the guide for action plan and (5) the “Aide Mémoire”. The Policy Manual is comprehensive and contains ten sections and an audit tool in appendix 1. There are five modules to the curriculum. The toolkit can be obtained from the WHO regional office for Africa (AFRO) in Harare, Zimbabwe.

Infection Prevention: Guidelines for health care facilities with limited resources

Pamela Lynam
JHPIEGO, Kenya

Infection Prevention: Guidelines for health care facilities with limited resources is a companion publication to the WHO/AFRO policy guidelines. It contains operational standards (how to), was completely revised and rewritten using evidence-based best practices in infection prevention and is intended for adaptation to country needs. The guide contains 28 modules in four parts: (1) fundamentals of infection prevention, (2) processing instruments, gloves and other items, (3) implementing infection prevention in health care facilities and (4) nosocomial infection.

His life and her trust are in your hands: The WHO CD-ROM toolkit on injection safety

Yvan Hutin
WHO, Geneva

The WHO CD-ROM toolkit on injection safety contains all the tools needed at the global, regional and national levels to benchmark, assess, implement and evaluate a national policy for the safe and appropriate use of injections. The user is guided through the toolkit according to his primary interest (physicians and injection prescribers, nurses and injection providers, public health specialists and communities). The CD-ROM also contains a pictogram bank, an image bank and a search tool.
WHO guiding principles to ensure injection device security

Sophie Logez
WHO, Geneva

Background

1. Injections are the most common health care procedure worldwide. In developing and transitional countries alone, some 16 thousand million injections are administered each year. Most injections, more than 90%, are given for therapeutic purposes while 5 to 10% are given for preventive services, including immunization and family planning. The majority of therapeutic injections in developing and transitional countries are unnecessary.

2. A safe injection does not harm the recipient, does not expose the health care worker to any avoidable risk and does not result in waste that is dangerous for the community. When injections are medically indicated they should be administered safely. Unsafe injections place patients at risk of disability and death. Reuse of injection devices without sterilization is of particular concern as it may transmit hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV), accounting for 30%, 41% and 5% of new infections in 2000, respectively. In addition, inappropriate and unhygienic use of multi-dose vials may transmit bloodborne pathogens.

3. Best infection control practices for intradermal, subcutaneous and intramuscular injections recommend the use of a new, single use injection device for each injection and for the reconstitution of each unit of medication. Sterile single use injection devices are widely available at low cost. The international retail price for a single use syringe and needle set ranges from 3 US cents (sterile hypodermic syringe 2 ml) to 6 US cents (auto-disable syringe 0.5 ml). Failure to systematically fund sufficient supplies of injection devices was identified as a key determinant of widespread reuse of syringes and needles in the absence of sterilization in immunization services. Interventions to increase the availability of injection devices in curative services have improved injection safety. Interventions to prevent infections with bloodborne pathogens through provision of single use devices are a very cost-effective investment in health.

4. Sterile, single use injection devices include sterile hypodermic syringes, sterile hypodermic needles, auto-disable syringes for immunization purpose, syringes with a reuse-prevention feature for general purpose and syringes with needle-stick-
prevention features (e.g., safety syringes) for general purposes. WHO is strengthening its collaboration with national regulatory authorities to ensure the quality and safety of injection devices through: (1) the enforcement of national regulations based upon international standards for injection devices and (2) reliance on internationally accepted certifying bodies that provide the ISO certification and carry out the auditing function.

5 The safe collection and disposal of used sharps (e.g., needles, syringes with fixed needles) are an integral part of the life cycle of injection devices. The collection of sharps waste in safety containers (e.g., safety boxes) at the point of use and their safe and environmentally-responsible disposal protect health care workers and the general public from needle-stick injuries. Interventions to reduce injection overuse reduce waste by facilitating its management. Management choice and technology options will depend on many considerations, including workers’ safety, sustainability and acceptability. Low-cost, effective waste treatment options are available.

6 UNFPA, UNICEF and WHO have reaffirmed the current policy stating that by the end of the year 2003, all countries should be using only auto-disable syringes in immunization services. Auto-disable syringes and safety boxes should be supplied in adequate quantities with all consignments of vaccines.

Recommendations

WHO recommends that injection device security is ensured in all health care facilities, including therapeutic services (see box below), so that injectable medicines, diluents, single use injection devices and safety boxes are supplied in timely manner in adequate quantities. In practice:

- WHO reaffirms the need to ensure access to single use injection devices and safety boxes of good quality. Sterile, single use injection devices for injection and reconstitution and safety boxes must be available in every health care facility in sufficient quantities for the number of injections administered;

- While the use of sterilizable injection devices is being phased out worldwide, WHO urges that all countries use only single use injection devices for therapeutic injections. Syringes with a reuse prevention feature offer the highest level of safety for injection recipients. They should be considered for use for therapeutic injections where local data indicate that unsafe practices are particularly common;

- WHO urges that by 2005 all injectable medications are supplied with matching quantities of single use injection devices, appropriate diluents and safety boxes through essential medicine programmes and other health programme supply mechanisms;

- To prevent injection overuse, national drug policies should promote the rational use of therapeutic injections. This may include removing unnecessary injectable medicines from the national essential medicines list;

- Health care services must manage sharps waste as part of the duty of care in a safe and environmentally responsible way, within a broader policy of health care waste management. Awareness and training for appropriate sharps waste management is required. Sharps waste disposal management should be costed, budgeted, and funded.

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WHO requests all donors and lenders who finance injectable products (i.e., vaccines, contraceptives and medications) also to finance appropriate quantities of single use injection devices, single dose diluents, safety boxes and the cost of sharps waste management. Syringes with a reuse prevention feature offer the highest level of safety for injection recipients. They should be considered where local data indicate that unsafe practices are particularly common. All organizations involved in medicine donations should also ensure that they are following this recommendation.

Strategy

WHO developed a strategy to ensure that special attention is paid to the safe administration of all types of injections in health care services. A set of tools is available to support the assessment, planning, implementation and evaluation of national injection safety policies for preventive and curative services. Ministries of Health, donors, lenders and partners who are active in the health sector, including in essential medicines programmes, are invited to endorse these recommendations. More information on injection safety is accessible on the WHO Injection Safety internet site (www.injectionsafety.org) which includes a toolkit of resources to assist in the management of national safe and appropriate use of injection policies.

In curative and preventive services, ensuring injection device security implies appropriate forecasting, financing, procurement and supply management so that the following items are available in adequate quantities:

- Injectable products;
- Appropriate single dose diluents;
- Single use injection devices for injection and reconstitution;
- Safety boxes.

This procurement policy does not imply that items mentioned above must be physically packaged together, but ultimately these items should be available in timely manner in health care facilities in adequate quantities. Suppliers and shipping routes may differ for injectable products, injection devices and other infection control supplies. The application and success of this policy is dependent on a reliable distribution system for health products.

* WHO. Tool for the assessment of injection safety, WHO/V&B/01.30.
† WHO. Managing an injection safety policy. March 2003. WHO/BCT/03.01.
The joint WHO/ICN project on health care worker protection in Tanzania, South Africa and Viet Nam

Susan Wilburn
ICN, Geneva

Protecting health care workers from needle-stick injuries

According to WHO’s World Health Report 2002, each year, in the world, two million needle-stick injuries occur worldwide among health care workers. In the population, they account for 40% of hepatitis B virus infections, 40% of hepatitis C virus infections and 2.5% of HIV infections. While hepatitis B virus infection can be prevented through immunization of health care workers early in their career, reduction of the risk of exposure can only be achieved through targeted intervention in the workplace. In occupational health, a logic of hierarchy of controls is applied to rank interventions from most to least effective.

Figure 1: Hierarchy of controls for the prevention of occupational exposure to needle-stick injuries.

The WHO-ICN needle-stick prevention project

The WHO-ICN needle-stick prevention project is a year’s project funded by the United States Centers for Disease Control (National Institute for Occupational Safety & Health [NIOSH]) to reduce occupational exposure and transmission of HIV and other bloodborne pathogens. It consists in a pilot project in three countries: South Africa, Tanzania and Viet Nam. Implementation will be carried out in collaboration with WHO (headquarters and regional office), Ministries of Health, national nursing associations and WHO Collaborating Centers in occupational health. The goals of the project are to (1) raise awareness on the risks of sharps-related HIV and hepatitis B & C transmission among health care workers, (2) implement programmes in three countries using existing systems and guidelines from ICN, the International Labour Organization (ILO) and WHO, (3) assess policy gaps, (4) develop surveillance system for needle-stick injuries, (5) train health care workers and (6) implement and evaluate the WHO injection safety toolkit. Those who care for those who care can contact Susan Wilburn (wilburn@icn.ch) at ICN and Gerry Eijkemans (eijkemansg@who.int) at WHO for more information.
WHO strategy for waste management

Richard Carr
WHO, Geneva

Understanding waste management, balancing risks

Health care produces waste that may be dangerous to the health care worker, the waste handlers or the community at large, exposing them to infections, toxic chemicals or injuries. Also, the management of health care waste may be harmful, for example through the production of dangerous incineration emission that endangers the environment and leads to disease among humans. Thus, we need to understand and measure the risks associated with waste production and its management to make the most rational decisions. Failure to do so reduces the benefit that health care provides.

The WHO strategy for waste management

The WHO strategy for waste management has four objectives. First, generation of evidence and information for policy (disease burden, risks related to waste management, reference and guidance material). Second, preparation of decision-making material (guides, case studies and Internet products). Third, availability of safe waste treatment options (description and contacts, framework to develop low-cost options). Fourth, assistance to country plans (networks, national workshops, pilot projects and assistance to immunization waste management).

Understanding the harm associated with incineration

Standards for emission of dioxins, furans and PCBs in industrialized countries are low (0.1-5 ng TEQ / m3). Small scale incinerators used in developing countries typically have higher emission rates (2-560 ng TEQ/m3). However, standards in industrialized countries are developed based on the assumption that the incinerator will be running 8 hours/day for 5 days/week. In practice, small scale incinerators at small hospitals run for 2 - 4 hours per week. The amount of toxic chemicals produced in four hours per week by a De Montfort incinerator would be less than that produced by small incinerators meeting the USA or Japan standards that ran for 40 hours/week. United States and Japanese standards could be met but the European ones will be very difficult to meet in any case. Thus, adaptation is needed.

Demonstration session on simple steps for infection control and prevention

Dorothy Andere,
JHPIEGO, Nairobi

Ethics and waste management

It is the moral responsibility of nurses and health care workers to protect patients from harm. They should not intentionally do anything harmful to themselves, their clients or the community. Nurses and administrators know that infection is spread by failure to provide a clean facility for use by sick and injured people. Cleaning the environment where you work in a health care setting is an issue for all cadres of health care workers whether it is done directly or delegated. Ultimately it is the nurse’s responsibility to protect patients and the public so that nosocomial infections do not occur.

Waste management in practice

Proper disposal of clinic wastes helps prevent the spread of infection not only to clinic personnel who handle the waste, but to the local community as well. It protects workers

* Toxicity equivalent
from needle-stick injuries. It also provides a clean, tidy atmosphere which pleases clients and staff alike. Waste should be sorted out by type so that each type of waste can be assigned to an adapted management option. Piles of waste should be avoided. In the area of waste management, infection control and needle-stick prevention, the ideal option is not always possible. An approach is to think of first choice, second choice and third choice options for each of the different types of waste produced in health care facilities (Table 2). Similarly, when appropriate sharps boxes are not available, they can be improvised with regular cardboard boxes. When open burning is the only solution, it should be supervised.

Ms Andere gave a demonstration of how health care workers in the region can be trained and updated in a practical, hands-on manner in the waste management aspects of infection prevention and control.

Table 3: Various options available for various types of waste.

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<th>3rd Choice</th>
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A guide for supportive supervision is included in the WHO CD-ROM toolkit for injection safety. This guide is being pilot-tested in Mongolia.
Identifying the respective roles of WHO and its partners

Evelyn Isaacs
WHO AFRO, Harare

OBJECTIVE 1: To update participants and partners on the assistance required for countries in Infection Prevention and Control (ICP) and injection safety in the prevention of HIV and nosocomial infections

Table 4: Respective roles of WHO and its partners

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Table 5: Respective roles of WHO and its partners (continued)

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OBJECTIVE 2: To agree on roles and responsibilities of each partner in the implementation of activities

 Partners reiterated their roles in line with their respective mandates in relation to infection prevention and control and injection safety. The comprehensive approach to infection prevention and control, including injection safety is the general view.
UNICEF will continue to play its role by providing technical and financial support to EPI programmes with a focus also on injection safety and infection prevention and control.

NAMRU-3 is a potential partner. Its role would be to focus on provision of technical assistance in the intervention areas mentioned above. NAMRU -3 is prepared to work with AFRO and can identify and support with fielding of consultants within the context of cross-regional transfer of skills and experiences.

CRHCS is willing and ready to collaborate with AFRO in the areas of training, advocacy and dissemination of lessons learned.

ICN play its role as stipulated above with focus on initial countries in the region (South Africa and Tanzania).

OBJECTIVE 3: Brief programme managers and other stakeholders actively involved in HIV/AIDS prevention and care programmes in sub-Saharan Africa on simple steps to prevent nosocomial infections.

Partners suggested possible ways for moving the agenda forward. Some suggestions included:

- Government’s support to reducing taxes and levies in order to reduce cost;
- Review problems associated with shortage or challenges related to availability of injection equipment. Advocacy is needed at national and international levels;
- Infection prevention and control and injection safety issues should be reflected on the agenda of all relevant committees at country level;
- Public education about infection prevention and control and injection safety, including waste management should be constantly carried out;
- WHO should circulate this matrix to other partners who are not present at the meeting so as to obtain additional information about their areas of work in relation to IPC and injection safety;
- Public education;
- Independent consultants would be willing to provide assistance in relation to outbreak assessments and investigations in health care settings.
Appendices

Appendix 1: List of participants  Page 33
Appendix 2: Programme of work  Page 41
Appendix 1: List of participants

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## Appendix 2: Programme of work

### Day 1: 18th September 2003

#### Morning

<table>
<thead>
<tr>
<th>Time</th>
<th>Subject</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.00 – 9.30</td>
<td>OPENING CEREMONY</td>
<td>WHO Representative: Dr. P. Eriki</td>
</tr>
<tr>
<td></td>
<td>Welcome remarks</td>
<td>WHO Representative: Dr. P. Eriki</td>
</tr>
<tr>
<td></td>
<td>Opening address</td>
<td>Mrs. Charity Ngilu, The Honourable Minister for Health, Kenya</td>
</tr>
<tr>
<td>9.30 – 9.40</td>
<td>Objectives and expected results</td>
<td>E. Isaacs - WHO</td>
</tr>
<tr>
<td>9.40 – 9.50</td>
<td>Progress since the last SIGN Meeting</td>
<td>Y. Hutin - WHO</td>
</tr>
<tr>
<td></td>
<td>Injection safety and infection control</td>
<td>O. Dia - WHO</td>
</tr>
<tr>
<td>10.40 – 11.00</td>
<td>Update of technical support provided by WHO and partners:</td>
<td>E. Isaacs - WHO</td>
</tr>
<tr>
<td></td>
<td>Infection Prevention and Control</td>
<td>O. Dia - WHO</td>
</tr>
<tr>
<td>11.00 – 11.30</td>
<td>Discussion</td>
<td>Chairperson</td>
</tr>
<tr>
<td>11.30 - 11.40</td>
<td>China – Progress toward injection safety</td>
<td>Y. Wen – MOH</td>
</tr>
<tr>
<td>11.40 - 11.50</td>
<td>Bangladesh – Role of auto-disable syringes in the new national injection safety policy</td>
<td>A. Rashid - MOH</td>
</tr>
<tr>
<td>11.50 - 12.30</td>
<td>Discussion</td>
<td>Chairperson</td>
</tr>
<tr>
<td>12.30 - 14.00</td>
<td>Lunch</td>
<td></td>
</tr>
</tbody>
</table>

#### Afternoon

<table>
<thead>
<tr>
<th>Time</th>
<th>Subject</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.00 – 14.20</td>
<td>Cambodia: From the rapid assessment to the plan of action</td>
<td>K. Kanal - MOH</td>
</tr>
<tr>
<td>14.20 – 14.40</td>
<td>Pakistan: Interactional Group Discussion to reduce injection overuse in the private sector</td>
<td>A. Hussain - HOPE</td>
</tr>
<tr>
<td>14.40 - 15.00</td>
<td>Discussion</td>
<td>Chairperson</td>
</tr>
<tr>
<td>15.00 - 15.10</td>
<td>Malawi – Advocating to achieve standards</td>
<td>A. Phoya - MOH</td>
</tr>
<tr>
<td>15.10 - 15.20</td>
<td>Egypt – Progress on injection safety and infection control</td>
<td>M. Talaat - MOH</td>
</tr>
<tr>
<td>15.20 - 15.40</td>
<td>Discussion</td>
<td>Chairperson</td>
</tr>
<tr>
<td>15.40 - 15.50</td>
<td>Mauritius – Government input to move from policy to action</td>
<td>G. Samnath - MOH</td>
</tr>
<tr>
<td>15.50 - 16.00</td>
<td>Discussion</td>
<td>Chairperson</td>
</tr>
<tr>
<td>16.00 - 16.30</td>
<td>Tea break</td>
<td></td>
</tr>
<tr>
<td>16.40 – 17.00</td>
<td>Results of waste management assessment in Africa 2003</td>
<td>A. Sawadogo - WHO</td>
</tr>
<tr>
<td>17.00 – 17.15</td>
<td>Vietnam – Technology transfer for safe injection technologies</td>
<td>L. T. M. Chau</td>
</tr>
<tr>
<td>17.15 – 17.45</td>
<td>Discussion</td>
<td>Chairperson</td>
</tr>
<tr>
<td>17.45 - 18.00</td>
<td>Facilitators meeting</td>
<td>WHO</td>
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</tbody>
</table>
Day 2: 19 September 2003

Morning

<table>
<thead>
<tr>
<th>Time</th>
<th>Subject</th>
<th>Presenter/Facilitator</th>
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</thead>
<tbody>
<tr>
<td>9.00-9.30</td>
<td><strong>Introduction to the WHO &amp; JHPIEGO Generic Package</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Policy document on Injection safety</td>
<td>O. Dia - WHO</td>
</tr>
<tr>
<td></td>
<td>Policy guidelines and curriculum for Infection Prevention and control</td>
<td>U. Reid – Consultant</td>
</tr>
<tr>
<td></td>
<td>Guidelines for Standard Setting</td>
<td>P. Lynam - JHPIEGO</td>
</tr>
<tr>
<td>9.30-9.45</td>
<td>Discussion</td>
<td>Chairperson</td>
</tr>
<tr>
<td>9.45-10.00</td>
<td>CD Rom tool kit for Injection Safety</td>
<td>Y. Hutin - WHO</td>
</tr>
<tr>
<td>10.00-10.15</td>
<td>Ensuring security of injection device</td>
<td>S. Logez - WHO</td>
</tr>
<tr>
<td>10.15-10.30</td>
<td>Discussion</td>
<td>Chairperson</td>
</tr>
<tr>
<td>10.30-11.00</td>
<td>Coffee break</td>
<td></td>
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<tr>
<td>11.00-11.15</td>
<td>Perspective on technology transfer</td>
<td>W. Dierrick - IASIT</td>
</tr>
<tr>
<td>11.15-11.30</td>
<td>Discussion</td>
<td>Chairperson</td>
</tr>
<tr>
<td>11.30-11.45</td>
<td>New syringes with reuse prevention features for the curative sector</td>
<td>L. Salerno - IASIT</td>
</tr>
<tr>
<td>11.45-12.00</td>
<td>Needle removal: An update from field assessments</td>
<td>M. Steele / A. K. Balaji - PATH</td>
</tr>
<tr>
<td>12.00-12.15</td>
<td>Injection equipment quality guide and the new proposed UN pre-qualification procedure for injection equipment</td>
<td>S. Logez - WHO</td>
</tr>
<tr>
<td>12.15-12.30</td>
<td>Discussion &amp; recommendations.</td>
<td>Chairperson</td>
</tr>
<tr>
<td>12.30-14.00</td>
<td>Lunch break</td>
<td></td>
</tr>
</tbody>
</table>

Afternoon

<table>
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<tr>
<th>Time</th>
<th>Subject</th>
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</tr>
</thead>
<tbody>
<tr>
<td>14.00-14.15</td>
<td>WHO strategy for sharps waste management</td>
<td>R. Carr - WHO</td>
</tr>
<tr>
<td>14.15-14.30</td>
<td>Waste management and infection control in Kwa Zulu Natal Province of South Africa</td>
<td>I. Jabu Nene - MOH</td>
</tr>
<tr>
<td>14.30-14.45</td>
<td>The “Health Care Without Harm” contest on waste management</td>
<td>F. Mahmoudi</td>
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<tr>
<td></td>
<td></td>
<td>J. Emmanuel</td>
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<td></td>
<td></td>
<td>P. Saoke - HCWH</td>
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<tr>
<td>14.45-15.00</td>
<td>Discussion</td>
<td>Chairperson</td>
</tr>
<tr>
<td>15.00-15.30</td>
<td>Demonstration session on simple steps for practicing safe disposal of waste, maintaining standard precautions and protecting the caretaker and client from needle-stick injuries</td>
<td>D. Andere - JPIEHSOGO</td>
</tr>
<tr>
<td>15.30-16.00</td>
<td>Discussion and recommendations.</td>
<td>Chairperson</td>
</tr>
<tr>
<td>16.00-16.30</td>
<td>Coffee break</td>
<td></td>
</tr>
<tr>
<td>16.30-17.00</td>
<td>Special session between WHO, NGOs and other partners</td>
<td>L. Thomas-Mapleh &amp; O. Dia - WHO</td>
</tr>
<tr>
<td></td>
<td>The Safe Health Care and HIV/AIDS Working Group</td>
<td>GHETS and PHR</td>
</tr>
<tr>
<td>17.00-17.15</td>
<td>Discussion</td>
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</tr>
<tr>
<td>17.15-18.00</td>
<td>Facilitators meeting</td>
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### Morning:

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<tr>
<th>Time</th>
<th>Subject</th>
<th>Presenters</th>
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</thead>
</table>
| 9.00 - 9.30 | Incorporating blood safety, injection safety and infection control elements in activities supported by the Global Fund and other funding mechanisms | E. Asamoah-Odei - WHO (Facilitators)  
O. Barreneche –WHO  
E. Friedman – PHR  
U. Reid - Consultant |
| 9.30 - 9.50 | Discussion                                                               |                                                 |
| 9.50-10.15 | The joint WHO-ICN project for the prevention of needle-stick injuries in Vietnam, Tanzania and South Africa. | S. Wilburn - ICN                                 |
| 10.15 - 11.00 | Partnerships: Feed back from the partners meeting                      | E. Isaacs - WHO                                 |
| 11.00 - 11.20 | Discussion                                                               | Chairperson                                     |
| 11.20 - 12.00 | Closure                                                                 | WHO Country Representative/ Kenya               |
Executive Summary

A number of health care procedures may lead to the transmission of HIV to patients, health care workers or the community at large. These include (1) transfusion of infected blood, (2) unsafe injections and (3) other skin-piercing procedures performed in the absence of universal precautions. Thus, safe health care services should offer to their users (a) a selection of blood donors, testing of blood units, appropriate clinical use of blood, and when applicable, viral inactivation of human material for therapeutic use, (b) safe and appropriate use of injections – which includes sharps waste management - and (c) procedures conducted according to universal precautions.

Interventions to prevent these health care-associated infections are available, effective and highly cost-effective. The transmission of HIV infection in health care settings can be prevented with only a modest shift in the assignment of resources, for two reasons. First, blood safety, reduction of injection overuse and injection safety are not costly interventions. Second, the majority of HIV infections worldwide are caused by unsafe sexual practices. While the emphasis of HIV prevention programmes should remain on preventing sexual transmission, efforts to make health care safer should not be neglected.

HIV prevention and care programmes should participate and spearhead interventions for safer health care within cross-cutting health care-strengthening initiatives. This can be achieved through (1) communication and behaviour change, (2) provision of single use injection devices and infection control supplies and (3) safe health care waste management. Global alliances of stakeholders, including the Safe Injection Global Network (SIGN) can assist in the creation of national infection control coalitions. The Global Fund to fight AIDS, Tuberculosis and Malaria as well as the World Bank “Multi-country AIDS Programmes” (MAP) and other funding partners provide an opportunity for countries to finance and scale up interventions through the provision of essential equipment and supplies. Through that approach, everyone will become involved so that the current initiative for “access to care” can become an initiative for access to safe health care.