



REPORT OF THE PRE-ICASA CONFERENCE SATELLITE MEETING IN NAIROBI, KENYA, 18-20 SEPTEMBER 2003 ON

# INJECTION SAFETY AND INFECTION CONTROL

*SAFE INFECTION GLOBAL NETWORK AND NATIONAL AIDS CONTROL PROGRAMME MANAGERS IN AFRICA*

WORLD HEALTH ORGANIZATION



**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

© World Health Organization 2003

This document is not a formal publication of the World Health Organization (WHO), and all rights are reserved by the Organization. The document may, however, be freely reviewed, abstracted, quoted, reproduced and translated, in part or in whole, but not for sale nor for use in conjunction with commercial purposes.

Maps: The designations employed and the presentation of material on maps included in this document do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

## **Table of contents**

TABLE OF CONTENTS .....	3
EXECUTIVE SUMMARY.....	4
INTRODUCTION .....	5
OBJECTIVE 1: EXCHANGE INFORMATION BETWEEN PARTNERS.....	7
OBJECTIVE 2: INCLUDING INFECTION PREVENTION AND CONTROL IN HIV PROGRAMMES .....	20
OBJECTIVE 3: SIMPLE STEPS TO TAKE IN INFECTION PREVENTION AND CONTROL .....	23
IDENTIFYING THE RESPECTIVE ROLES OF WHO AND ITS PARTNERS .....	30
<b>APPENDICES .....</b>	<b>32</b>
APPENDIX 1: LIST OF PARTICIPANTS.....	33
APPENDIX 2: PROGRAMME OF WORK.....	41

## **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 is 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 1: Review of the status of the action points formulated in New Delhi in August 2001**

<i>Action point</i>	<i>Status</i>	<i>Comment</i>
Practical "Injection safety planning aid"	Achieved	<ul style="list-style-type: none"> <li>▪ "Managing injection safety" and costing tool</li> </ul>
Policy statements by professional associations	Achieved	<ul style="list-style-type: none"> <li>▪ International Council of Nurses (ICN)</li> <li>▪ World Medical Association (WMA)</li> </ul>
Improved mechanism for setting standards	Achieved	<ul style="list-style-type: none"> <li>▪ Draft ISO standards for immunization auto-disable (AD) syringes available</li> <li>▪ ISO standards for curative auto-disable syringes in preparation</li> </ul>
Policy for better access to injection equipment	Achieved	<ul style="list-style-type: none"> <li>▪ WHO guiding principles on injection equipment security</li> </ul>
Assistance to AD syringes introduction	Achieved	<ul style="list-style-type: none"> <li>▪ "V&amp;B" document</li> </ul>
Waste management option database	Achieved	<ul style="list-style-type: none"> <li>▪ 30 new options added to the database</li> </ul>
Advocacy kit	Achieved	<ul style="list-style-type: none"> <li>▪ "First do no harm" brochure and CD-ROM</li> </ul>
National SIGN coalitions	In progress	<ul style="list-style-type: none"> <li>▪ New coalitions in China, Bangladesh, Guinea and Uganda</li> </ul>
Health care worker protection working group	Partially achieved	<ul style="list-style-type: none"> <li>▪ Global Burden of Disease estimates, "Aide Mémoire" and pilot project</li> </ul>
SIGN working groups in WHO regional offices	Partially achieved	<ul style="list-style-type: none"> <li>▪ Focal point in WPRO. Other regional offices in the process of being organized</li> </ul>
Better communication with IASIT	Achieved	<ul style="list-style-type: none"> <li>▪ Collaboration for all key documents, including technology transfer</li> </ul>
Synergies with other programme areas	Achieved	<ul style="list-style-type: none"> <li>▪ Mainstreaming of injection safety within HIV, essential drugs, immunization and environmental health</li> </ul>
Progress towards plastic recycling	In progress	<ul style="list-style-type: none"> <li>▪ Pilot projects initiated</li> </ul>
Joint resource mobilization efforts	Not achieved	<ul style="list-style-type: none"> <li>▪ Unclear whether this is feasible</li> </ul>
Pilot projects on AD syringes introduction	In progress	<ul style="list-style-type: none"> <li>▪ First projects being initiated in Africa and Asia</li> </ul>
Quantification of the importance of illegal recycling	In progress	<ul style="list-style-type: none"> <li>▪ Study in progress in Pakistan</li> </ul>
National Regulatory Authority assessment tool	Achieved	<ul style="list-style-type: none"> <li>▪ First assessment just completed in China</li> </ul>
Option paper on waste management	In progress	<ul style="list-style-type: none"> <li>▪ New full time focal point hired by WHO</li> </ul>
Local production of sharps containers	In progress	<ul style="list-style-type: none"> <li>▪ Countries reporting local production</li> </ul>
Environment-friendly syringes	Not achieved	<ul style="list-style-type: none"> <li>▪ Objective needs to be clarified</li> </ul>
Engagement of environmental stakeholders	Not achieved	<ul style="list-style-type: none"> <li>▪ Unmet need</li> </ul>
Centralized waste management	In progress	<ul style="list-style-type: none"> <li>▪ New full time focal point hired by WHO</li> </ul>

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 (CRHCS), 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/CRHCS 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 internationally 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 address 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 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.

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.

Jorge Emmanuel and Paul Saoko  
Health Care Without Harm and Physicians for Social Responsibility, Nairobi and Manila

### *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](http://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

---

Eric Friedman  
Physicians for Human Rights, Washington, DC

#### *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 disburses 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.

## 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. <sup>\*</sup> 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 <sup>†</sup> 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. <sup>‡</sup> In addition, inappropriate and unhygienic use of multi-dose vials may transmit bloodborne pathogens. <sup>†</sup>
- 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. <sup>§</sup> 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. <sup>\*\*</sup> Interventions to increase the availability of injection devices in curative services have improved injection safety. <sup>††</sup> Interventions to prevent infections with bloodborne pathogens through provision of single use devices are a very cost-effective investment in health. <sup>‡‡</sup>
- 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-

---

<sup>\*</sup> Simonsen L, Kane A, Lloyd J, Zaffran M, Kane M. Unsafe injections in the developing world and transmission of bloodborne pathogens. *Bulletin of the World Health Organization* 1999;77:789-800.

<sup>†</sup> Best infection control practices for skin-piercing intradermal, subcutaneous and intramuscular needle injections. WHO/BCT/DCT 01.02

<sup>‡</sup> Hauri AM, Armstrong GL, Hutin YJF. Contaminated injections in health care settings. In *Comparative Quantification of Health Risks: Global and Regional Burden of Disease Attributable to Selected Major Risk Factors*. Ezzati M, Lopez AD, Rodgers A, Murray CJL. Editors. Geneva: World Health Organization, 2003.

<sup>§</sup> Hutin Y, Hauri A, Stilwell B, Ghebrehiwet T, Chiarello L, Garner J. Best infection control practices for skin-piercing intradermal, subcutaneous and intramuscular needle injections. WHO/BCT/DCT/01.02 November 2001.

<sup>\*\*</sup> Dicko M, Oni A-Q Q, Ganivet S, Kone S, Pierre L, Jacquet B. Safety of immunization injections in Africa: Not simply a problem of logistics. *Bulletin of the World Health Organization* 2000; 78: 163-9.

<sup>††</sup> Fitzner J, Aguilera JF. Survey on injection safety in Burkina Faso. Mission Report, Unpublished WHO Document, June 2000.

<sup>‡‡</sup> Dziekan G, Chisholm D, Johns B, Rovira J, Hutin Y. The cost-effectiveness of policies for the safe and appropriate use of injection in health care settings. *Bulletin of the World Health Organization* 2003; 81 (4).

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.

---

\* ISO standard: ISO 7886 –1: Sterile hypodermic syringes for single use - Part 1: Syringes for manual use, 1993. [www.iso.ch](http://www.iso.ch).

† WHO-UNICEF-UNFPA Joint statement on the use of auto-disable syringes in immunization services. 1999. WHO/V&B/99.25.

- 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.<sup>\*†</sup> 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](http://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:<sup>‡</sup>

- 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.

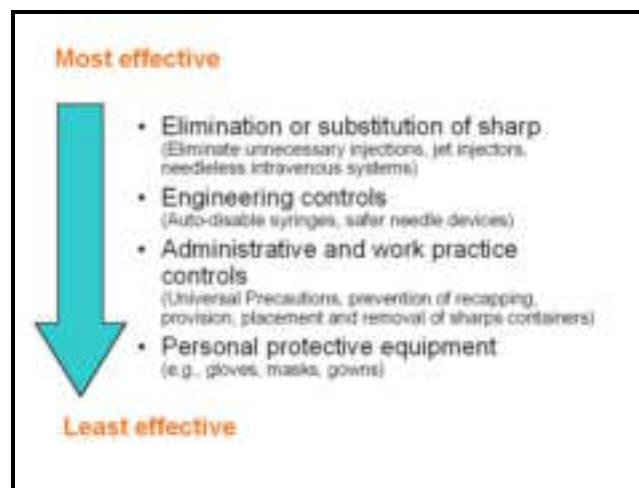
† WHO. Managing an injection safety policy. March 2003. WHO/BCT/03.01.

‡ Hart C, M Usher. Contraceptive Security, What Is It and What Best Practices Achieve It? Arlington, VA.: DELIVER/John Snow, Inc. Presented in Cairo at the WHO Inter-country Meeting with Partners and Country Teams: Best Practices to Improve Reproductive Health. 2002.

*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.

### *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<sup>\*</sup>/m<sup>3</sup>). Small scale incinerators used in developing countries typically have higher emission rates (2-560 ng TEQ/m<sup>3</sup>). 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.**

	<b>1st Choice</b>	<b>2nd Choice</b>	<b>3rd Choice</b>
Non-hazardous burn	Incinerate	Open burn	Bury
Hazardous burn	Incinerate	Bury	Open burn
Non-hazardous - no burn	City council facility	Bury	NA
Hazardous - difficult to burn	Incinerate	Bury	NA

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 (IPC) and injection safety in the prevention of HIV and nosocomial infections*

**Table 4: Respective roles of WHO and its partners**

	Intervention areas/Needs								
	CRHCS	NAMRU-3	UNICEF	JSI	JHPIEGO	ICN	HCWH	GHETS/PHR	WHO/HQ
Assessment in:									
▪ IPC	X	X				X			X
▪ IS			X						X
Policy development	X	X TA		X		X			X
Guidelines development	X	X TA			X	X			X
Adaptation of generic material					X				
Waste management			X		X		X		X

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

	Intervention areas								
	CRHCS	NAMRU-3	UNICEF	JSI	JHPIEGO	ICN	HCWH	GHETS/PHR	WHO/HQ
<ul style="list-style-type: none"> <li>▪ HIV prevention activities i.e. supply of gloves, medications for health workers</li> <li>▪ Health worker education/training programmes i.e. in-service, pre-service, community health workers training etc.</li> <li>▪ IEC materials development</li> <li>▪ PEP programme development and support</li> <li>▪ Blood safety programmes</li> </ul>	X	X		X	X	X	X	X	X
Infrastructure development <ul style="list-style-type: none"> <li>▪ Soap dispensers</li> <li>▪ Sinks</li> <li>▪ Incinerators</li> </ul>									
Procurement of injection equipment Sharps disposal equipment Needles and syringes			X						
Advocacy and dissemination of best practices	X				X		X	X	

*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

### WHO Temporary Advisors

ADDO, Nii Akwei  
Programme Manager  
National AIDS/STI Control Programme  
P.O. Box KB 493  
Korle Bu, Accra – Ghana  
Tel: 233-21-662691  
Fax: 233-21-662691  
E-mail: nacp@internetghana.com

AFFANA, Gislaine Aja Ngaska  
Assistant Director  
National AIDS Committee  
P.O. Box 4482  
Yaounde – Cameroon  
Tel: 237 221 4469/9800362  
Fax: 237 221 6552  
Email: Guilaine\_ada@yahoo.com

ALTAF, Arshad  
Aga Khan University  
Stadium Road  
P.O BOX 3500  
Karachi 74800 – Pakistan  
Tel: +92 (21) 493 0051 x4811  
Fax: +92 (21) 493 4294 / 2095  
E-mail: arshad.altaf@aku.edu

AMANDUA, Jacinto  
Commissioner, Clinical Services  
Ministry of Health  
P.O. Box 7272  
Kampala – Uganda  
Tel: +256 (41) 231 576  
Fax: +256 (41) 231 584  
E-mail: jamandua@yahoo.co.uk

BAKOUAN, Didier R.  
Programme Coordinator  
Ministry of Health  
05BP 6270  
Ouagadougou 05 - Burkina Faso  
Tel: 226 313401  
E-mail: didier\_bakouan@sante.gov.bf

BALAJI, K. Ananth  
Children's Vaccine Program at PATH,  
53, Lodhi Estate, Sangha Rachna Building,  
New Delhi 110003 – India  
Tel: +91 (11) 24656062  
Fax: +91 (11) 2463124  
E-mail: balaji@pathindia.org

BLANKEMEYER, Michael  
Contracts Assistant  
UNICEF Supply Division  
UNICEF Plads., Freeport  
D-2100 Copenhagen – Denmark  
Tel: +45 (35) 27 3097  
Fax: +45 (35) 269 421  
E-mail: mblankemeyer@unicef.org

ANDERE, Dorothy  
JHPIEGO Regional Office Kenya  
Nairobi, Kenya  
Tel : (254-020) 3751882  
Fax :  
Email : DAndere@jhpiego.or.ke

BWAKURA, Tapiwanashe Rameck  
Consultants (HIV/AIDS Care)  
Ministry of Health  
P.O. Box 132 N. Mandela Ave  
Harare  
Zimbabwe  
Tel: +263-11-403 994  
Fax:  
E-mail: bwakura@africaonline.co.zw

CAMPBELL, Eileen  
Coordinator, Health Action AIDS  
Physicians for Human Rights  
100 Boylston Street, Suite 702  
Boston, MA 02116 -USA  
Tel: +1 (617) 695 0041  
Fax: +1 (617) 695 0307  
E-mail: ecampbell@phrusa.org

CHAU, Le Thi Minh  
Medical Plastic Company - MEDIPLAST  
89 Luong Dinh Cua, Phuong Mai, Dong Da Dist.  
Hanoi City – Vietnam  
Tel: +84 4 576 0770  
Fax: +84 4 574 0160  
E mail: mediplast@fpt.vn

CHEBET, Kenneth  
Kenya  
Tel:  
Fax:  
E-mail:

CHRISTENSEN, Jackie Hunt  
Health Care Without Harm  
1755 S Street, NW  
Suite 6B  
Washington DC 20009 – USA  
Tel:  
Fax: +1 (202) 234 9121  
E-mail:

EMMANUEL, Jorge  
Medical Waste Consultant  
Health Care without Harm  
628 Second Street, Rodeo, CA 94572  
USA  
Tel: +1 (510) 799 2551  
Fax: +1 (510) 799 2572  
E-mail: jemmanuel@mindspring.com

FELLINI, Bridget Canniff  
Director of International Programs  
Global Health through Education, Training and  
Service (GHETS)  
8 North Main Street, Suite 404  
Attleboro, MA 02703 – USA  
Tel: +1 (508) 226 5091 (Ext. 15)  
Fax: +1 (508) 448 8346  
E-mail: bridget@ghets.org

FISHER, June  
Senior Scientist  
TDICT Project  
San Francisco General Hospital  
1001 Potero Ave, 6E3  
San Francisco, CA 94110 – USA  
Tel: +1 (415) 641 4163  
Fax: +1 (415) 648-5569  
E-mail: tdictproj@aol.com

FRIEDMAN, Eric A.  
Policy Research Associate  
Physicians for Human Rights  
1156 15th Street, NW, Suite 1001  
Washington, DC 20005 – USA  
Tel: +1 (202) 728 5335  
Fax: +1 (202) 728 3053  
E-mail: efriedman@phrusa.org

GISSELQUIST, David  
29 West Governor Road  
Hershey, PA 17033 – USA  
Tel: +1 (717) 533 2364  
Fax: +1 (717) 835 0192  
E-mail: david\_gisselquist@yahoo.com

HOEKSTRA, Edward  
Senior Health Advisor  
UNICEF NYHQ  
3 UN Plaza  
New York, NY 10017 – USA  
Tel: +1 (212) 326 7423  
Fax: +1 (212) 824 6460  
E-mail: ehoekstra@unicef.org

HUSSAIN, Aqil  
Research Medical Officer  
Health Orientated Preventive  
Education (HOPE) NGO  
Flat No. 110, Khadija Market  
Block I Nazimabad  
Karachi – Pakistan  
Tel: +92 (21) 4539393, 6634264  
Fax: +92 (21) 4549529  
E-mail: hussain\_aqil@yahoo.com

JAFRI, Syed Kumail  
Infection Prevention and Control Program  
Mail Code 2134, King Fahad National Guard  
Hospital  
P.O Box 22490  
Riyadh 11426 - Kingdom of Saudi Arabia  
Tel: +966-1-2520088 – Ext 3145  
Fax: +966-1-2520088 Ext: 3733  
Mobile: +9661-059245471  
E-mail: skumail@yahoo.com

KAIPILYAWAR, Satish, B.  
PATH, (Hyderabad) India  
IVth Floor, APHMHDC Building  
Sultan Bazaar, Koti  
Hyderabad 500095 - India  
Tel: +91 (40) 246 00192/57053/57065  
Fax: +91 (40) 246 00204  
E-mail: satish@pathindia.org

KANDURI, Anantha Balaji  
Program Administrator  
PATH  
53, Lodhi Estate, New Delhi-110003  
India  
Tel: +91 (11) 24656062  
Fax: +91 (11) 24631240  
E-mail: balaji@pathindia.org

KARASI, Claude J.  
MOH/Treatment & Research AIDS Center  
BP: 184 MOH/TRAC  
Rwanda  
Tel: +2 505 70421 / 022 5008595412  
Fax: +2 50570422  
E-mail: churk@rwanda1.com  
karasirw@yahoo.fr

KIBUKA, Sarah  
Assistant Coordinator, Nursing Affairs  
Commonwealth Regional Health Community  
Secretariat  
P.O. Box 1009  
Arusha – Tanzania  
Tel: +255 (27) 250 363  
Fax: +255 (27) 250 8292  
E-mail: skibuka@crhcs.or.tz

KOUM, Kanal  
Director, NMCHC  
Ministry of Health  
Street France Sras Chak, Daum Penh  
Phnom Penh - Kingdom of Cambodia  
Tel: +855 12 943785  
Fax: +855 23 42 68 41  
E-mail: nmchc@online.com.kh

LONGOLOMOI, Ibrahim  
Injection Safety Officer – KEPI  
Ministry of Health  
Division of Primary Health Care  
Nairobi – Kenya  
Tel : 254-2 2721057  
Fax :  
Email : kepi@iconnect.co.ke

LWENYA, Catherine  
John Snow International  
Nairobi – Kenya  
Tel:  
Fax:  
E-mail: clwenya@cb.jsikenya.com

LY, Abdoulaye  
Director of AIDS & STI Division  
Ministry of Health  
BP – 28571  
Dakar Medina – Senegal  
Tel: +221 822 9045  
Fax:  
E-mail: lysabdoulaye@yahoo.fr

LYNAM, Pamela  
Regional Technical Director  
JHPIEGO (Johns Hopkins University)  
P.O. Box 58247  
Nairobi, Kenya  
Tel: +254 (20) 3751-882  
Fax: +254 (20) 3751-652  
E-mail: plynam@jhpigo.or.ke

MAHMOUDI, Firuzeh  
Health Care Without Harm  
1442A Walnut Street #20  
Berkeley, CA 94709 – USA  
Tel: +1 (510) 524 4000 extension 103  
Fax: +1 (510) 524 4228  
Email: firuzeh@essential.org

MAIKERE, Rosalie  
TRANSFER  
Preenakker 20  
B-1785 Merchtem – Belgium  
Tel: + 32 (52) 261 000  
Fax : + 32 (52) 261 001  
E-mail: transfer@msf.be

MARQUET, Benoît  
Responsible Pharmacist  
CHMP Kenya  
Off Mombasa Road, behind Libra House,  
POBox 10397, Tom Mboya. 00400 Nairobi - Kenya  
Tel : +254-(20) 531750  
Mob: +254 (2) 0733 749 029  
Fax : +254 (20) 532669  
Email : kenya@chmp.org

MEN, Chean Rithy  
PhD Student  
University of Hawaii – USA  
Tel: +855 (12) 557709  
Fax: +855 (23) 427039  
E-mail: chean@hawaii.edu

MENGISTE, Gezanegn  
Regional Tetanus Advisor  
UNICEF Regional Office for Eastern & Southern  
Africa (ESARO)  
UNICEF-ESARO  
Nairobi – Kenya  
Tel: (254-2) 622641  
Fax: (254-2) 622678 / 79 / 521913  
Email: gmengiste@unicef.org  
gmengiste@yahoo.co.uk

MOHAMED, Ibrahim  
Deputy Director NASCOP  
Ministry of Health  
P.O. Box 19361  
Nairobi, Kenya  
Tel: +254 (2) 2714972  
Fax:  
E-mail: mmbibrahim@yahoo.com

NELSON, Carib  
PATH  
1455 NW Leary Way  
Seattle, WA 98107 – USA  
Tel: +1 (206) 285 3500  
Fax: +1 (206) 285 6619  
E-mail: cnelson@path.org

NKUMALE, Rejoice  
Ministry of Health & Social Welfare  
P.O Box 1119  
Mbabane – Swaziland  
Tel: +9 (268) 404 1911  
Fax: +9 (268) 404 0746  
E-mail: mavisnx7@yahoo.co.uk

OCHIRBAT, Tsembe  
Director,  
MONSAM Co. Ltd  
P.O. Box 382  
Ulaanbaatar 210620 – Mongolia  
Tel: +976 (11) 351072  
Fax: +976 (11) 351068  
E-mail: monsam1995@yahoo.com

ODOYO, Martin Shikuku  
PSR-Kenya (Intern)  
Adams Arcade, Suite No. 4  
Off Ngong Road  
Nairobi – Kenya  
Tel: +254 20 573398/ +254 721 320 801  
Fax:  
E-mail: martinodoyo@yahoo.com

OJA, Henrik  
Vice President  
Mediburner Ltd  
Asemakatu 21  
FIN-90100 Oulu – Finland  
Tel. +3358 400 284 288  
Fax. +358 8 312 0962  
E-mail: henrik.oja@mediburner.com

PATEL,  
Business Consultant  
Unimed Supplies & Services  
P. O. Box 21847  
Nairobi – Kenya  
Tel : +254 (20) 581282  
Fax : +254 (20)  
E-mail : uni@bidii.com

PHOYA, Ann Maureen  
Director, Nursing Services  
Ministry of Health & Population  
Malawi  
Tel: +265 01789-2100  
Fax: +265 789431  
E-mail: phoyaa@malawi.gov.mw  
Annphoya2003@yahoo.co.uk

PONZIO, Louis  
Mali  
Tel:  
Fax:  
E-mail:

POSSY, Mugenyi  
Assistant Program Manager  
UNEPI/Ministry of Health  
P.O. Box 7272  
Kampala – Uganda  
Tel : +256 (41) 321 427  
Fax :  
E-mail : unepi@infocom.co.ug

RASHID, Abdur  
Director, Hospital  
Department of Health Services  
Ministry of Health  
Mohakhali, Dhaka 1212 – Bangladesh  
Tel:+880 (2) 882 9493  
Fax: +880 (2) 882 9493  
E-mail: rashid@dshs.org

RASOLOMANANA, Saholy  
Ministry of Health  
Antananarivo – Madagascar  
Tel: +261 (33) 118 2553  
Fax:  
E-mail: rsaholy@francite.com

REID, Una V.  
HRD Consultant  
2 Brickell Mews  
Kingston 8 – Jamaica  
Tel: +1 (876) 969 8414  
Fax: +1 (876) 969 8414  
E-mail: uvr@cwjamaica.com

SALOVAARA, Annika Maria  
Contracts Officer  
UNICEF Supply Division  
UNICEF Plads., Freeport  
D-2100 Copenhagen – Denmark  
Tel: +45 3527 3067  
Fax: +45 3526 94 21  
E-mail: asalovaara@unicef.org

SAMNATH, G.  
Chief Nursing Officer  
Ministry of Health – Quality of Life  
5th floor, P. Louis – Mauritius  
Tel: 210-1892/1893  
Fax: 201 3340  
E-mail:

SAOKE, Paul  
PSR Kenya  
P.O Box 19565, KNH 00202  
Nairobi – Kenya  
Tel: +254 (2) 573 398  
Fax: +254 (2)  
E-mail: psaoke@isde.org

SPANNER, Soren  
Technical Officer  
UNICEF Supply Division  
UNICEF Plads., Freeport  
DK-2100 Copenhagen – Denmark  
Tel: +45 (35) 273 021  
Fax: +45 (35) 269 421  
E-mail: sspanner@unicef.org

STEELE, Matthew  
Clinical & Field Research Coordinator  
PATH  
1455 NW Leary Way  
Seattle, WA 98107 – USA  
Tel: +1 (206) 285 3500  
Fax: +1 (206) 285 6619  
E-mail: msteale@path.org

SUPIOT, Monique  
Technical Officer  
UNICEF Supply Division  
Freeport Copenhagen  
UNICEF Plads, Freeport  
2100 Copenhagen – Denmark  
Tel: +45 (35) 273 042  
Fax: +45 (35) 269 421  
E-mail: msupiot@unicef.org

TALAAAT, Maha  
Head, Infection Control Branch  
US Naval Medical Research Unit  
4-Latin America Str, Osivis Building, 11461  
Garden City, Cairo – Egypt  
Tel: +20 (2) 790 0119  
Fax: +20 (2) 794 8940  
E-mail: talaatm@namru3.org

VOETBERG, Bert  
Human Development Network  
World Bank, Kenya Country Office  
Nairobi – Kenya  
Tel: +254 (20) 260451  
Fax: +254 (20) 260384  
E-mail: Avoetberg@worldbank.org

WILBURN, Susan  
International Council of Nurses  
3, place Jean Marteau  
1201 Geneva – Switzerland  
Tel: +41 (22) 908 01 00  
Fax: +41 (22) 908 01 01  
E-mail: wilburn@icn.ch

WEN, Yi  
Division Treatment & Care  
National Center for AIDS/STD Control &  
Prevention, CDC – China  
No.27 Nanwei Road, Beijing 100050 – China  
Tel: +8610-63039072  
Fax: +8610-63039087  
E-mail: fuwenyi@vip.sina.com

### *Industry Participants*

AL OMARI, Osama  
Abu Dhabi Medical Devices Co. L.L.C.  
(MEDECO)  
Abu Dhabi Industrial Area - In Mussafah  
P.O. Box 30485  
Abu Dhabi - United Arab Emirates  
Tel: +971 2 5510111  
Fax: +971 2 5511162  
E-mail: tech@medeco-uae.com  
medeco@emirates.net.ae

BADIANI, Shashi V.  
Medical Doctor (DR) – Director  
Alpha Medical Manufacturers Ltd.  
Road C, Off Enterprise Road  
P. O. Box 8737  
Nairobi 00300 – Kenya  
Tel: +254 (20) 532169  
Fax: +254 (20) 532286  
E-mail: amm1@africaonline.co.ke

BEEHARY, Girindre  
Becton-Dickinson  
Castelló 55, 28001  
Madrid – Spain  
Tel: +34 690 604 296  
Fax: +34 91 848 8101  
E-mail: girindre\_beeharry@bd.com

BULLOCK, Robin  
Star Syringe Limited  
Star House, Forest Row  
East Sussex, RH18 5DN - United Kingdom  
Tel: +44 (1342) 825777  
Fax: +44 (1342) 826271  
E-mail: rbullock@starsyringe.com

DIERICK, William  
Marketing & Business Development Manager  
Terumo Europe NV  
Researchpark Zone 2 Haasrode  
Interleuvenlaan 40  
B- 3001 Leuven – Belgium  
Tel: +32 (16) 381 450  
Fax: +32 (16) 400 249  
E-mail: william.dierick@terumo-europe.com

DUESMAN, Kathryn R.N.  
Director, Clinical Affairs  
Retractable Technologies, Inc  
622 South Mill Street  
Lewisville, TX 75057 – USA  
Tel: +1 (972) 221 6644  
Fax: +1 (972) 221 9786  
E-mail: rticlinical@vanishpoint.com

GADDE, Renuka  
Becton-Dickinson  
1 Becton Drive, MC 379  
Franklin Lakes, NJ 07417 – USA  
Tel: +1 (201) 847 6480  
Fax: +1 (201) 847 4896  
E-mail: renuka\_gadde@bd.com

GARIN, Fiona  
BD Immunization - Medical Systems  
Camino de Valdeoliva, s/n  
28750 San Agustin de Guadalix  
Madrid – Spain  
Tel: +34 (609) 700245  
Fax: +34 (91) 8488137  
E-mail: fiona\_garin@europe.bd.com

JANOWITZ, Gail  
Becton-Dickinson  
1 Becton Drive, MC 379  
Franklin Lakes, NJ 07417 – USA  
Tel: +1 (201) 847 7449  
Fax: +1 (201) 847 4896  
E-mail: gail\_janowitz@bd.com

KOSKA, Marc  
Star Syringe Limited  
Star House, Forest Row  
East Sussex, RH18 5DN - United Kingdom  
Tel: +44 (1342) 825777  
Fax: +44 (1342) 826271  
E-mail: mkoska@starsyringe.com

MINIX, Larry  
Tyco Healthcare, EMEA  
104 Arbor View Court  
Ponte Vedra Beach  
Florida 32082 – USA  
Tel: +1 (904) 373 0424  
Fax: +1 (904) 373 0424  
E-mail: minixL@comcast.net

NATH, Rajiv  
Hindustan Syringes & Medical Devices Ltd  
174 Sector 25  
Ballagbarh, Faridabad 121004 – India  
Tel: +91 (129) 223 3242/ 506 1151  
Fax: +91 (129) 506 1164  
E-mail: hmdhealthcare@vsnl.com

NORGARD, Tina  
Destroject GmbH  
Havelstrabe 1-3  
24539 Neumünster – Germany  
Tel: +49 4321 840000  
Fax: +49 4321 840022  
E-mail: tina@destroject.com

SAKER, Marwan  
SOVANA, INC  
4500 Fuller Dr., Ste 426  
Irving, TX 75038 – USA  
Tel: +1 (972) 541 1100  
Fax: +1 (972) 541 1011  
E-mail: msaker@sovanainc.com

SALERNO, Lillian  
President – IASIT  
24, Chemin de Mont-Rose  
CH-1294 Genthod  
Geneva – Switzerland  
Tel: +41 (22) 731 7380/ +33 450 203 255  
Fax: +41 (22) 731 7382  
E-mail: lillian\_salerno@yahoo.com

VEROLLET, Gerald  
Marketing Vice President,  
UNITRACT  
210 George Street  
Sydney NSW 2000 – Australia  
GPO Box 3400 NSW 2001 Australia  
Tel: +612 9251 6566  
Fax: +612 9251 6033  
E-mail: gerald.verollet@unitract.com

ZERAIE, Mohammed  
General Manager  
Medeco - Abu Dhabi Medical Devices Co.  
P.O Box 30485  
Abu Dhabi – UAE  
Tel: + 971 (2) 551 1153  
Fax: +971 (2) 551 1162  
E-mail: gm@medeco.uae.com

ZWEIG, Phillip  
Communications Director  
Retractable Technologies, Inc  
330 E. 38Th St. No. 16Q  
New York, NY 10016 – USA  
Tel: +1 (212) 490-0811  
Fax: +1 (212) 490-1248  
E-mail: plzweig@aol.com

## WHO Secretariat

### WHO Regional Office for Africa

ASAMOAH-ODEI, Emil  
Medical Officer  
WHO/AFRO/RPA  
P.O. Box BE 773  
Harare – Zimbabwe  
Tel: +1 (321) 733 9154  
Fax: +1 (321) 733 9000  
E-mail: asamoahodeie@whoafr.org

BAH-SOW, Oumou Younoussa  
WHO/AFRO/TUB  
P.O. Box BE 773  
Harare – Zimbabwe  
Tel: +263 (4) 700 026/263 23292295  
Fax: +263 (4) 253 731  
E-mail: bah-sowo@whoafr.org

DIA, Ousmane  
Technical Officer  
WHO/AFRO/VPD  
P.O. Box BE 773  
Harare – Zimbabwe  
Tel: +263 091 918 845  
Fax: +263 (4) 253 731  
E-mail: diao@whoafr.org

ERIKI, Peter  
WHO Representative in Kenya  
PO Box 45335  
4th Floor ACK Garden House  
First Ngong Avenue  
Nairobi – Kenya  
Tel: +254 (22) 351 347  
Fax: +254 (22) 719 142  
E-mail: who@whokenya.org

CHITSIKE, Inam  
PMTCT Regional Adviser  
WHO/AFRO  
Djane-06 Brazzaville  
Congo  
Tel:  
Fax:  
Email: chitsikei@afro.who.int

ISAACS, Evelyn  
WHO/AFRO/RPA  
P.O. Box BE 773  
Harare – Zimbabwe  
Tel: +263 (4) 706 951  
Fax: +263 (4) 253 731  
E-mail: isaacse@whoafr.org

KALU, Akpaka  
EPI/Kenya  
PO Box 45335  
4th Floor ACK Garden House  
First Ngong Avenue  
Nairobi – Kenya  
Tel: +254 (22) 351 347  
Fax: +254 (22) 719 142  
E-mail:

KANGANGI, Joel  
NPO/TB/Kenya  
PO Box 45335  
4th Floor ACK Garden House  
First Ngong Avenue  
Nairobi – Kenya  
Tel: +254 (22) 351 347  
Fax: +254 (22) 719 142  
E-mail:

MAPLEH, Louis  
WHO/AFRO/RPA/ICP  
P.O. Box BE 773  
Harare – Zimbabwe  
Tel: +263 (4) 253724/30  
Fax: +263 (4) 253 721/2  
E-mail: maplehl@whoafr.org

MASON, Elizabeth  
Regional Advisor IMCI  
WHO/AFRO  
P.O. Box BE 773  
Harare – Zimbabwe  
Tel : 263 (4) 706951/915  
Fax :  
Email : masone@whoafr.org

MURITHI, Assumpta  
NPO/IMCI/Kenya  
PO Box 45335  
4th Floor ACK Garden House  
First Ngong Avenue  
Nairobi – Kenya  
Tel: +254 (20) 271 7902  
Fax: +254 (20) 2719 142  
E-mail: muriithia@whokenya.org

NKHOMA, Wilfred  
WHO/AFRO/TUB  
P.O. Box BE 773  
Harare – Zimbabwe  
Tel: +263 (4) 746000/011  
Fax: +263 (4) 746823  
E-mail: nkhomaw@whoafr.org

SAWADOGO, Adama  
Technical Officer  
WHO/AFRO  
01 BP 2494, Abidjan 01, Côte d'Ivoire.  
Tel: +225 22 51 72 00  
Fax: +225 22 52 43 11  
E-mail: sawadogoa@wr.oms.bf  
sawadogoa@oms.ci

TAYLOR, Emmanuel  
P. O Box 45335  
4th Floor ACK Garden House  
First Ngong Avenue  
Nairobi – Kenya  
Tel: +254 (2) 717 902  
Fax: +254 (2) 715 225  
E-mail: emmanuel.taylor@whonbo.unon.org

WHO Regional Office for the  
Western Pacific

BARRENECHE, Oscar  
Medical Officer  
WHO Cambodia  
P.O Box 1217  
177 Pasteur St.  
Sangkat Chaktomuk  
Phnom Penh – Cambodia  
Tel: +855 (23) 216610  
Fax: +855 (23) 216 211  
E-mail: barrenecheo@cam.wpro.who.int

THAMI, Yogi  
WHO/WPRO  
P.O Box 2932  
1099 Manila – Philippines  
Tel: +63 (2) 528 9832  
Fax: +63 (2) 526 0279/0362  
E-mail: thamiy@wpro.who.int

Headquarters

CARR, Richard  
SDE/PHE/WSH  
Tel: +41 (22) 791 3518  
Fax: +41 (22) 791 4159  
E-mail: carr@who.int

HUTIN, Yvan  
HTP/BCT/DCT/SIGN  
Tel: +41 (22) 791 3431  
Fax: +41 (22) 791 4836  
E-mail: hutiny@who.int

JAMENYA, Adisa  
HTP/BCT/DCT/SIGN  
Tel: +41 (22) 791 1275  
Fax: +41 (22) 791 4836  
E-mail: jamenyaa@who.int

LOGEZ, Sophie  
HTP/BCT/DCT  
Tel: +41 (22) 791 3604  
Fax: +41 (22) 791 4836  
E-mail: logezs@who.int

PFEIFER, Dina  
Medical Officer  
FCH/VAB/VAM  
Tel: +41 (22) 791 2978  
Fax: +41 (22) 791 4210  
E-mail: pfeiferd@who.int

SCHMID, George  
HTM/HIV/SRM  
Tel: +41 (22) 791 1227  
Fax: +41 (22) 791 4834  
E-mail: schmidg@who.int

WIERSMA, Steve  
FCH/VAB/EPI  
Tel: +41 (22) 791 1511  
Fax: +41 (22) 791 1111  
E-mail: wiersmas@who.int

*Interpretation*

NDICHIA, Martin  
Interpreter  
P. O. Box 62235  
Nairobi – Kenya  
Tel: +254 (20) 271 4270  
Fax: +254 (20) 271 4270  
E-mail: mndichia@hotmail.com

MOUTOU, Lewis Toussaint  
Interpreter  
Assonvilla Grand-Gaube – Mauritius  
Tel : +230 288 8678  
Fax : +230 288 8678  
E-mail : lewismoutou@intnet.mu

DURAND-GWANZURA, Wendy Joan  
Interpreter  
WHO/AFRO  
No.1 Sardy Les Jorges, 182 JIJE Ave  
Harare, Zimbabwe  
Tel : 263 (4) 703305  
Fax : 263 (4) 774875  
Email : transline@africaonline.co.zw

*Technical assistance in information  
technologies*

GATHURU, Kenneth Smith  
IT Assistant  
P.O. Box 56383  
Nairobi 0100 GPO – Kenya  
Tel : +254 (0)733 759 814  
Fax :  
E-mail : kennieg@bigfoot.com





## Appendix 2: Programme of work

Day 1: 18th September 2003

### Morning

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

### Afternoon

<u>Time</u>	<u>Subject</u>	<u>Presenter</u>
14.00 – 14.20	Cambodia: From the rapid assessment to the plan of action	K. Kanal - MOH
14.20 – 14.40	Pakistan: Interactional Group Discussion to reduce injection overuse in the private sector	A. Hussain - HOPE
14.40 - 15.00	Discussion	Chairperson
15.00 - 15.10	Malawi – Advocating to achieve standards	A. Phoya - MOH
15.10 - 15.20	Egypt – Progress on injection safety and infection control	M. Talaat - MOH
15.20 - 15.40	Discussion	Chairperson
15.40 – 15.50	Mauritius – Government input to move from policy to action	G. Samnath - MOH
15.50 - 16.00	Discussion	Chairperson
16.00 -16.30	Tea break	
16.30 – 16.40	Pakistan- What about illegal packing and re-processing of injection devices?	A. Altaf – SIN
16.40 – 17.00	Results of waste management assessment in Africa 2003	A. Sawadogo - WHO
17.00 – 17.15	Vietnam – Technology transfer for safe injection technologies	L. T. M. Chau
17.15 – 17.45	Discussion	Chairperson
17:45 - 18:00	Facilitators meeting	WHO

Day 2: 19 September 2003

---

*Morning*

<u>Time</u>	<u>Subject</u>	<u>Presenter / Facilitator</u>
9.00- 9.30	Introduction to the WHO & JHPIEGO Generic Package	
	Policy document on Injection safety	O. Dia - WHO
	Policy guidelines and curriculum for Infection Prevention and control	U. Reid – Consultant
	Guidelines for Standard Setting	P. Lynam - JHPIEGO
9.30- 9.45	Discussion	Chairperson
9.45- 10.00	CD Rom tool kit for Injection Safety	Y. Hutin - WHO
10.00 – 10.15	Ensuring security of injection device	S. Logez - WHO
10:15 – 10.30	Discussion	Chairperson
10.30 – 11. 00	Coffee break	
11.00- 11.15	Perspective on technology transfer	W. Dierrick - IASIT
11.15 – 11.30	Discussion	Chairperson
11.30 - 11.45	New syringes with reuse prevention features for the curative sector	L. Salerno - IASIT
11:45-12:00	Needle - removal: An update from field assessments	M. Steele / A. K. Balaji - PATH
12.00 - 12.15	Injection equipment quality guide and the new proposed UN pre-qualification procedure for injection equipment	S. Logez - WHO
12:15 - 12:30	Discussion & recommendations.	Chairperson
12.30- 14.00	Lunch break	

*Afternoon*

<u>Time</u>	<u>Subject</u>	<u>Presenter / Facilitator</u>
14.00 – 14.15	WHO strategy for sharps waste management	R. Carr - WHO
14.15 – 14.30	Waste management and infection control in Kwa Zulu Natal Province of South Africa	I. Jabu Nene - MOH
14.30 –14.45	The “Health Care Without Harm” contest on waste management	F. Mahmoudi J. Emmanuel P. Saoko - HCWH
14.45- 15.00	Discussion	Chairperson
15.00 - 15.30	Demonstration session on simple steps for practicing safe disposal of waste, maintaining standard precautions and protecting the caretaker and client from needle-stick injuries	D. Andere - JPIEHGO
15.30 - 16.00	Discussion and recommendations.	Chairperson
16.00 – 16.30	Coffee break	
16:30-17:00	Special session between WHO, NGOs and other partners	L. Thomas-Mapleh & O. Dia - WHO
	The Safe Health Care and HIV / AIDS Working Group	GHETS and PHR
17:00-17:15	Discussion	Chairperson
17:15 - 18.00	Facilitators meeting	WHO

Day 3: 20 September 2003

---

*Morning:*

<u>Time</u>	<u>Subject</u>	<u>Presenters</u>
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.

**Safe Injection Global Network (SIGN)**

Blood Safety and Clinical Technology

World Health Organization

20, avenue Appia

1211 Geneva 27

Switzerland

Fax: + 41 22 791 48 36

E-mail: [sign@who.int](mailto:sign@who.int)