



# SAFE INJECTION GLOBAL NETWORK ANNUAL MEETING

23-25 OCTOBER 2007, WHO, GENEVA

2007

WORLD HEALTH ORGANIZATION





## Safe Injection Global Network



# Report of the Global Injection Safety and Infection Control Meeting

23-25 October 2007  
WHO - Geneva

## Report of the 2007 SIGN annual meeting

Injection safety is a must in the HIV era

The annual Meeting of the Safe Injection Global network was held at WHO Headquarters in Geneva Switzerland 23 - 25 October 2007.

### Table of Contents

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Day 1 Plenary Tuesday 23 October 2007 .....	2
Session 1: Updates on Injection safety and Infection Control.....	2
Session 2: Integrating Injection safety into health systems .....	6
Day 2: Parallel Sessions Wednesday 24 October 2007.....	8
Theme 1: Review strategies to improve implementation of injection safety and related infection control programmes at country level .....	8
Theme 2: Improved access by developing countries to safe injection technologies: the role of industry.....	15
Theme 3 : Review strategies on how to measure the impact of injection safety and related infection control strategies at country level .....	19
Theme 4: Comprehensive strategies for the prevention of blood borne pathogens transmission in health-care settings .....	24
Received abstracts not in program.....	28
Day 3 Plenary: Summary Recommendations of Parallel Sessions.....	30
Guidance to Countries.....	30
Guidance to SIGN Members.....	31
Guidance to the Medical Device Manufacturing Industry.....	32
Guidance to the SIGN Secretariat.....	33
Near Term: 2008 - 2009.....	33
Medium Term 2009 Onwards.....	34
Annex 1: Useful indicators for health workers, patients, and the community.....	35
Annex 2: Programme of Work .....	36
Annex 3: List of Participants .....	41

## Report of the 2007 SIGN annual meeting

Injection safety is a must in the HIV era

The annual Meeting of the Safe Injection Global network was held at WHO Headquarters in Geneva Switzerland 23 -25 October 2007.

More than 100 experts from SIGN member organizations worked to reach consensus in four thematic groups: to review strategies to improve implementation of injection safety and related infection control strategies at country level; to review strategies on how to measure the impact of the strategies at country level; identify comprehensive strategies for the prevention of blood borne pathogen transmission in healthcare settings; and the role of industry in improving developing country access to safe injection technologies.

### Day 1 Plenary Tuesday 23 October 2007

Adoption of agenda, objectives of meeting and programme of work, updates, integration of safety in health systems.

Chair, Professor Shaheen Mehtar      Rapporteur: Allan Bass

### Session 1: Updates on Injection safety and Infection Control

#### **Report on last SIGN meeting recommendations**

Selma Khamassi, WHO/HQ

Many of the objectives set at the SIGN meeting 2006 have been achieved (Tables below).

Several international stakeholders working on injection safety joined the alliance and we would like to welcome them to the network.

Although major steps towards achieving injection safety were taken by several countries, injections are still unsafe and more work needs to be done.

Areas that need further attention were identified as themes for parallel break out sessions which allow in depth discussion and operational recommendations. SIGN participants must work more closely together to ensure scaled up injection safety interventions and to better impact at country level.

<b>Recommendations related to SIGN meeting 2007</b>		
<b>Action point</b>	<b>Status</b>	<b>Comments</b>
SIGN Meeting 2007 should contain fewer presentations and allow more time for discussion	Achieved	
Consider offering concurrent sessions	Achieved	4 parallel sessions planned on Day 2
Build- in time in the schedule to develop, discuss and reach consensus on SIGN meeting recommendations	Achieved	Last day dedicated to recommendations
Increase participation from countries where SIGN strategies are implemented	Achieved	35% of participants are country representatives

<b>Recommendations related to injection safety</b>		
<b>Action point</b>	<b>Status</b>	<b>Comments</b>
Keep the focus on Injection safety and rational use of injections	Achieved	
SIGN should include IV, Lancets and phlebotomy as they are high risk procedures	Achieved	Ass tool developed. Pilot testing in Oman and Philippines
SIGN to promote collaborative in-country partnerships to ensure sustainability of injection safety initiatives	Achieved	
SIGN working groups in WHO Regional Offices	Achieved	Focal points in all WHO Regional Offices
SIGN should advise WHO that specifications and position statement on needle removers are urgently needed when field trial data becomes available	Partially achieved	-Specifications finalized - Position statement awaiting field trial data
SIGN should develop resource materials for providers on correct site and proper injection techniques	Achieved	Standard Precautions for Injection Safety flash cards

<b>Recommendations related to Integrated Infection Control Strategies</b>		
<b>Action point</b>	<b>Status</b>	<b>Comments</b>
SIGN should incorporate work done by Patient Safety in its training materials and promote core messages on hand hygiene	Achieved	Pyramid on glove use and hand washing and hand rubbing posters included in the Standard Precautions for Injection Safety Toolkit
SIGN should include dentistry in injection safety assessments	Achieved	Revised Tool C includes indicators on injection practices in dentistry

<b>Recommendations related to Health care Workers safety</b>		
<b>Action point</b>	<b>Status</b>	<b>Comments</b>
SIGN should recommend to countries to develop and implement policies on workers vaccination and monitor coverage in these populations	Achieved	Presentation in parallel session 4 about WHA resolution on the immunization of HCW and its implementation
SIGN should advise IASIT, EUCOMED, ISO and other bodies involved in standard-setting that occupational health and safety experts should be part of all device standards meeting	Achieved	WHO/SIGN is member of the ISO technical working group on needle stick prevention syringes

<b>Recommendations related to Rational Use of Injections</b>		
<b>Action Point</b>	<b>Status</b>	<b>Comments</b>
SIGN should disseminate study results on rational use of injections to encourage countries to review their essential medicines lists as an important way of decreasing unnecessary injections	Achieved	2 country presentations: China and Bangladesh on Day 2, Theme 3
	In process	

<b>Recommendations related to Quality and Access to safe Injection Devices</b>		
<b>Action Point</b>	<b>Status</b>	<b>Comments</b>
A working group to make technical recommendations on adoption of new safe injection devices and to work on tender specifications should be established	Not achieved	Following recommendations of parallel session 2, a working group will be established
SIGN should advise IASIT and EUCOMED that wider dissemination of information about availability, price and safety features of all safe injection devices will enable procurement bodies at country level advise MOH on what equipment to procure for each type of injections including phlebotomy	In process	Theme of Parallel Session 2
Industry is a critical contributor in ensuring the availability of affordable injection devices. SIGN should explore ,with the industry, the market in terms of cost trends analysis, life cycle of current products as well as industry willingness and ability to support global needs in the future and disseminate this information to countries and procuring bodies	Achieved	Reason for having Theme 2 "Increased access by developing countries to safe injection devices: the role of industry" in current SIGN meeting

<b>Recommendations related to Health care Waste Management</b>		
<b>Action point</b>	<b>Status</b>	<b>Comments</b>
SIGN in line with global initiatives such as GAVI should advocate for waste management and ensure it remains high on the agenda	Achieved	
By next SIGN meeting , the WHO Concept Paper on Waste Management should be approved	Achieved	Update on this concept paper will be presented on Day 2, Theme 1

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## Update on community safe injection initiatives worldwide

Garance F. Upham 1, A. Mwadi Kady 2, Dr EIB Okechukwu 3

### Key Issues:

Twenty five years into the epidemic of the bloodborne retrovirus HIV, and many more years into the Hepatitis C epidemic, a lot remains to be achieved for safe infections in poor communities. WHO estimates are that 50% of the estimated 16 billion injections given in the developing countries in 2000 are still unsafe. But community initiatives such as "POST" in India are showing the way to go.

Implementing safe injections is a must to protect communities from HIV and Hepatitis and, at the same time, to protect people already living with HIV from contracting Hepatitis and other bloodborne infections (including other patients HIV viruses that may be ARV resistant, at a time when ARV resistance has spread globally). Safe injections are an essential measure for prevention and care.

Yet, there is still an underestimate of the number of injections per adults, of the percentage of unsafe procedures and underestimate of the risks involved, including misleading beliefs that HIV does not survive outside the body on dirty surfaces and in syringes' blood residues, while recent scientific studies shows HIV to survive over 14 days.

While several WHO initiatives have improved the situation over the past years (SIGN, the World Alliance for Patient Safety Challenge, Safe Surgery and Essential Health Technologies initiatives) and a number of governments have acted to diagnose and improve on the situation on a national level, among whom India, or Uganda, the lack of thought given to the necessary involvement of patients group, community groups, health staff at the lowest level, waste collecting staff, has hindered or even, in some instances, blocked progress in countries.

Furthermore, denial of HIV infections contracted in health care through blood contact is a terrible cause of discrimination against women in particular, as very precise scientific studies report 97% and more of HIV+ women are either virgins or faithfully married, and studies in African countries have found a surprisingly high percentage of seronegative husbands. As well, while the US FDA forbids recently tattooed individuals from giving blood, the dangers of needle re-use for tattooing youth is not mentioned.

We review communities awareness of the risks of unsafe injection practices, and selected developing countries community grass root initiatives to improve safe injection practices and home-grown remedies for safe injections. Exemplary initiatives are reported such as the Nigerian NGO solution to waste disposal, the women solidarity network awareness on needle sharing in the Democratic Republic of Congo, and, from India, the POST ( Patient Observed Sterile Treatment), a new Indian publication telling the lay person how to protect himself or herself.

1 General Secretary, Safe Observer International, Chair, Disability and Economics Circle, Peoples Health Movement

2 President, Society for Women and AIDS -SWAA, Kinshasa, Democratic Republic of the Congo

3 President, Actionfamily2000, Abuja, Nigeria

## Session 2: Integrating Injection safety into health systems

### Key Elements to Successful and Sustainable Injection Safety

Anthony Battersby FBA Health Systems Analysts

A successful injection safety must cover all parts of a health service that handle sharps and:

- Seek to minimize the number of injections given in both the public and private sector.
- Ensure that adequate stocks of injection supplies are always available and that they are all correctly and safely used.
- Ensure that waste is safely disposed and destroyed
- Ensure that needle stick injury is avoided and that all health workers and ancillary staff working with sharps are immunized against hepatitis B and supplied with and use personal protection equipment
- Find ways to destroy used syringes and needles in an environmentally acceptable way until technologies are developed to make it possible to refabricate the waste plastic into new products

Sustainability will only be achieved when resource depletion is minimized. At present the estimate is that the 16 billion syringes used worldwide per year consume as much energy as over 3 million western European homes a year. This has an impact also on climate change contributing over 2 million tonnes of CO<sub>2</sub> to the environment per year.

Syringes do exist that could reduce these figures to 250,000 and 250,000 respectively.

At present the cost of injection equipment is not affordable by most of the poorest countries and ways have to be found to lower cost closed to the cost of glass syringes. Reprocessing plastic could provide a valuable source of income to offset the cost of original purchase.

Injection Policy must be inclusive and to quote from WHO *A broad strategy to promote the safety of all injections* Geneva 1998:

•“In all countries National Health Authorities should choose systems and allocate budget to ensure safe injections that encompass all components: training of staff, establishment of monitoring, acquisition of equipment and supplies, their distribution and use, disposal and destruction of waste, and final containment. These systems must fit the conceptions of the society in which they will be used, must tolerate the level of operations management available, and must be affordable.

•The omission of any single component will cause a chosen injection strategy to become unsafe.”

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## **East, Central and Southern African Health Community (ECSA-HC) Commitment to Infection Prevention and Control and Safe Injection Practices: Focus on ECSA Health Ministers Resolutions and their Implementation**

Helen Lugina , East, Central and Southern African Health Community

Background: ECSA-HC has for a long time been involved in Infection Prevention and Control and Safe Injection Practices. A study on safe injections conducted by the East Central and Southern African College of Nursing in 3 member states - revealed the need to expand focus to embrace all areas in the health care delivery systems. The findings were presented to the Directors' Joint Consultative Committee in 2001 who recommended the project to be based in the Quality Assurance programmes in Ministries of Health and include other health workers. A presentation of the findings and recommendations was made to the 32nd Regional Health Ministers Conference who resolved and urged member states to strengthen National Infection Prevention and Safe Injections Policies. Member states were further urged to develop guidelines and procedure manuals for all areas that are likely to spread infections and allocate adequate resources to support IPC and safe injections. The same resolution urged ECSA-HC Secretariat to assist member states to develop harmonized Infection Prevention and Control (IPC) policies, programmes and activities. With WHO/AFRO support, IPC Manual and Guidelines were developed in three member states and they were later adopted/adapted by the 3 countries plus an additional three others. Recognizing the extensive work and expertise in Infection Prevention, JHPIEGO was requested to join ECSA-HC and WHO/AFRO to move the IPC agenda forward. ECSA-HC, in collaboration with JHPIEGO and the Regional Centre for Quality in Health Care (RCQHC), sponsored by USAID-EA, held a Six State of the Art (SOTA) workshop on Infection Prevention and Control (IPC). The workshop focused on strengthening the regional policies and guidelines as well as specific work plans for in country implementation. The activity aimed at strengthening the ongoing regional and in-country activities in response to Resolution 5 of the 32nd Health Ministers Conference on IPC including Safe Injection practices.

Resolution No. 11 of the 44th ECSA Health Ministers Conference: During the 44th ECSA Health Ministers' Conference, two presentations on safe injection practices were made. Following these presentations, a resolution (No. 11) focusing on injection safety was passed. In this resolution, member states were urged to implement, support or scale up existing comprehensive injection safety programmes.

Action Points of Resolution No. 11: The action points recommend that injection safety programs in the countries should include injection safety devices, sharps waste disposal, healthcare worker training, public information to decrease demand for unnecessary injections and adoption by the National Regulatory Agencies of international standards on product quality and development and implementation of national policies on injection safety. The same resolution urged ECSA-HC Secretariat to host a forum of participating ECSA member states to share and discuss key points of program implementation. ECSA-HC Secretariat was further urged to facilitate communication among key stakeholders.

Planned Follow-Up Activities on Injection Safety and IPC: In Collaboration with SafePoint, ECSA-HC is planning to conduct a regional experts' meeting to discuss issues of safe injection practices. The meeting is expected to come up with ideas on how the safe injection agenda can be strengthened as well as how documentation and sharing of best practices can be enhanced. ECSA-HC also plans to continue providing technical support to countries to develop their IPC policies and develop implementation plans. In partnership with other stakeholders, ECSA-HC intends to further the work of developing/adapting harmonized training curricula for IPC and injection safety and facilitates its integration in pre-service curricula.

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**Day 2: Parallel Sessions** Wednesday 24 October 2007

### **Theme 1: Review strategies to improve implementation of injection safety and related infection control programmes at country level**

Chair: Pr Shaheen Mehtar

Rapporteur: Marcia Rock

Objectives and main outcomes of the group work :

The group was invited to discuss and answer the following questions:

- What arguments should be used to convince decision makers at country level to invest in injection safety? How to gather this evidence? Who should provide it?
  - How injection safety strategies could be integrated into health systems?
  - What is needed to make it happen?
  - How could SIGN assist countries developing and implementing injection safety and related infection control strategies?
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### **Policy Development and Implementation: The Uganda experience.**

Dr. Victoria Masembe, Country Director, MMIS-Uganda, Dr. David Pyle, Senior Associate, JSI/MMIS

Issues: Unsafe injection practices in Uganda pose avoidable risks to health care providers, patients, and communities. Major contributing factors include lack of proper guidance at national level, limited current knowledge and skills among injection providers, shortages of appropriate injection commodities, and a need for awareness among health managers and community members. To bring about effective change, these issues should be addressed by providing policy guidance at national level to increase awareness of community members.

Description. With competing priorities and limited resources, capturing the attention of policy makers to formulate injection safety policy is challenging. To facilitate the process in Uganda, program managers whose performance is affected by unsafe injections presented surveillance data to senior management to demonstrate the significance of

the problem. Existing national surveillance data provided an analysis of the risk posed to providers, patients and communities, and where data was not available, additional assessments provided valuable information. Global evidence from respected and reliable sources also supported the public health significance of the problem. A multi-disciplinary team formulated policy recommendations that were later used in policy and guideline dissemination, implementation and advocacy, and an external consultant helped focus attention on making injection safety policy a national priority.

Results: Assessment findings two years later show an improved policy environment, improved injection practices in the country, a reduction in unnecessary injections and enhanced commodity procurement and forecasting.

Lessons learned: To make injection safety policy formulation an issue of national priority, availability of active surveillance teams, organizations willing to fund research, standard tools for data collection, external consultants, and informed local technical teams are instrumental.

Proper planning for implementation of the policy should give special attention to commodity security and formation of skilled technical teams at various levels.

Proper guidance through policy dissemination, together with implementation of targeted interventions, results in a significant reduction in exposure to bloodborne disease via injections in medical settings.

Recommendations: Work within existing structures. Use a multi-disciplinary approach for easy take of the policy. Encourage buy-in by other stakeholders.

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## **Injection safety alliance: developing partnerships and providing training in Pakistan**

Lubna Samad,

Training of health care workers in injection safety/standard precautions was organized in four cities (Karachi, Rawalpindi, Islamabad and Lahore) of Pakistan as a collaborative effort of the Center for Injection Safety and its Injection Safety Alliance partners. A series of one day workshops were conducted for 25-30 health care workers each, with representation from private and public sector hospitals. Presentations were given on the Epidemiology of Unsafe Injections, Standard Precautions for Injection Safety, Health Care Waste Management and Post Exposure Prophylaxis. Interactive discussions were held on standard precautions based on tools developed by WHO/SIGN secretariat as part of the training. Immediate impact of training was judged using a pre- and post-test during the workshop while long term impact was evaluated by observing injection practices at facilities using a standardized form, conducting a delayed post test at 3-6 months post training and an in depth assessment with the help of focus groups of previously trained health care workers. An assessment of barriers and challenges faced in implementing safe injection practices in our initial year of training health care workers is presented. Lessons learnt will dictate planning for future training programs and help develop implementation strategies.

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## Smart Injection Programme proposed by SafePoint Trust

Marc Koska, SafePoint Trust

Aim: to stop disease being spread through medical injections

Why are syringes reused? Insufficient product supply; a misunderstanding by some healthcare providers of the risks that reuse poses; or a perception that it is 'cheaper' to reuse or recycle devices, even if they only cost a few cents?

Safe injection programmes to date have successfully focused on immunisation and target areas in therapeutic care. But for injection safety to be effective, it must be universal. The Smart Programme proposes a holistic and sustainable solution to cover all injections, that builds on programmes already running successfully in country.

The Smart Programme proposes co-funding by countries and donors to bridge the resource and information gaps between unsafe and safe injections. These gaps have four components which the Programme proposes to fill:

1. Full quantities of safety syringes. Injection safety cannot discriminate between types of injection or drug. The Programme proposes co-funding to cover the price difference between standard and safety syringes. Safety syringes must be able to show conformity with accepted international quality standards. The Smart Programme is product-independent.
2. Waste management planning and resources. This is already a problem in many countries, so this must be addressed with quick and comprehensive action, relevant to each country context.
3. Training for healthcare providers. To promote the rational use of injections, and to allow healthcare workers to carry out their duties in safety to themselves, the patient, their co-workers and the environment.
4. Public information on injection safety. Patients have a right to know the health risks they face and how to avoid them. Today most are not aware. SafePoint is a UK registered charity established by Marc Koska OBE in 2006 to spread clear and unbiased information to the general public through both mass media and local direct programmes. SafePoint has partnered with Save the Children and Rotary as well as many local community groups to deliver the message.

Smart is an investment in improving existing healthcare delivery: a Smart foundation to the system.

Initial studies suggest that complete co-funding of the required four elements can be provided for around an additional 5 cents per injection. Many stakeholders are needed to achieve the Smart Programme, and we welcome participation. The ECSA region of Africa were the first to sign up for this comprehensive injection safety action using the principles of the Smart Programme, and SafePoint are proud to work as a partner to them.

Unsafe injections can be eradicated. We believe that through a programme such as Smart this can be done comprehensively, and permanently, with clear and lasting benefits to all.

[www.safepointtrust.com](http://www.safepointtrust.com)

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## **WHO Concept paper on healthcare waste management**

Yves Chartier, WHO

WHO aims at developing clear guidance, policies, recommendations for safety of health workers and all. The guiding principles of the Policy paper on safe health-care waste management are to prevent the health risk associated with exposure to HCW by promoting sound management policies and to reduce the exposure to toxic pollutants associated with the combustion process through the promotion of appropriate practices.

To support implementation a WHO health care waste web Site available at: <http://www.healthcarewaste.org> or [http://www.who.int/water\\_sanitation\\_health](http://www.who.int/water_sanitation_health) offers technical options, costing tools, country information, contacts and 142 reference documents.

Partnership is also a key function. In June 07 at WHO Geneva a 3-day meeting on HCWM supported by the Gates Foundation brought together 50 participants from 30 nationalities with country representatives, UN, NGOs, industry, WHO country and regional members.

The WHO core principles recognize that safe and sustainable management of health-care waste is a public health imperative and a responsibility of all. This problem can be solved. The right investment of resources and commitment will result in a substantive reduction of disease burden and corresponding savings in health expenditures. The WHO core principles require that all associated with financing and supporting health-care activities should provide for the costs of managing health-care waste.

A number of activities are taking place in countries. The 2006-2007 objective of the health-care waste component of the Global Alliance for Vaccine and Immunization is that by the end of 2007, 60% countries receiving GAVI support (36 countries - half of them being is Sub-Saharan African countries) have adopted national policy and developed plans on Health-care waste management.

Global Environmental Facility project - 2006 – 2010. The Global Environmental Facility project (GEF) on Health Care Waste Management is to demonstrate and promote best techniques and practices for reducing health care waste to avoid environmental release of dioxins and mercury. The participating countries are: Argentina, India, Latvia, Lebanon, The Philippines, Senegal and Vietnam (+ Tanzania). The project implementation has not started yet.

Three Expanded Costing Assessment Tool have been developed and they differentiates between low, middle and high income countries. They also provide sharps costs per syringe, key indicative value of sharps waste generation rates in kg / bed per day and more.

In conclusion, there are on-going and better structured dynamics taking place which demonstrate that despite the enormous challenge that safe waste management represents, this is not a hopeless battle to ensure safety.

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## **Study for better forecasting of syringes: Results of syringe consumption monitoring: 6 MMIS countries**

Ousmane Dia, JSI, MMIS

**Context:** Ensuring sufficient and continuous access to injection equipment is a key element of any strategy to achieve the safe and appropriate use of injections. However the health commodity supplies system in countries is not strong enough to ensure the sufficient and continuous availability of health commodities including injection supplies. There is no functional logistics management information system (LMIS) for public health commodities. "Shortage here" (often) and "Overstock there" (rarely) are common.

**Approach:** The project originally used the only available demographic data for planning, which was the statistic from WHO of 1.5 injections per person per year used. Because syringes in curative services are multi-purpose they cannot be reasonably forecast by disease burden, bundling or injection statistics. Consumption based forecasting is the most appropriate method. However there was extremely insufficient data at country level. To improve ability of countries to plan, MMIS introduced a concentrated survey of consumption patterns in selected districts.

The survey is being conducted in Kenya, Botswana, Uganda, Rwanda, and Ethiopia because their operation context best supports the activity. This activity will continue through February 2008. Achieving completeness of at least 80% will give the project and hence to the countries more reliable data to consider for future forecasting.

The developed LMIS tool was not only designed for the survey but to be used by National and District managers to monitor their pipeline and make the necessary adjustments.

**Outcome and Challenges:** The study provided very important data and information such as: The number of syringes per person per year is diverse; correct mix of syringes by of sizes; % of curative and EPI; % of syringe for injections vs syringes for non injection purposes; consumption according to sizes and level of health facility; estimation of total need compared to total availability; importation statistics by private versus public.

**Recommendations:** Proper selection, quantification and forecasting of injection supplies are critical components of ensuring a safe injection device security strategy and implementing Logistics Management Information System is key in this effort.

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## **Studying and implementing the monitoring-training-planning strategy to ensure the rational use of injections in the hospitals of the Upazila Health Complexes of Bangladesh**

A. K. Azad Chowdhury\*, Md. Sayedur Rahman\*\*, A. B. M. Faroque\*

The unsafe use of injections is a great problem causing spread of HIV, HBV and HCV and other viral infections and malaria in the developing world. It is reported that unsafe use of injections in the South Asia zone was alarmingly high. In the present study it was observed that the use of injections in the hospitals of the primary health care centres known as upazila health complexes (UHCs) of Bangladesh was very high, especially in the health conditions such as (i) ARI/ pneumonia, (ii) dehydration, (iii) injury, (iv) pyrexia of unknown origin and (v) general weakness. In each of the above cited conditions injections were used in  $\geq 60\%$  of the encounters.

The monitoring-training-planning (MTP) strategy was introduced in the 10 hospitals of UHCs, 5 from each district, of Dhaka and Noakhali to reduce the use of injections. In the district of Noakhali analgesic injections were used in  $\geq 67\%$  of the encounters in injury in the UHCs of Chatkhil, Senbag and Subarnachar. Introduction of four MTP meetings reduced the injection use from 67% to 17% in Chatkhil, from 67% to 28% in Senbag and from 80% to 16% of the encounters in Subarnachar UHC. The use of Ceftriaxone injection in ARI/pneumonia was reduced to 11% from 87% in Companygonj and to 0% from 77% of the encounters in Sonaimuri, of the same district, by four MTP meetings.

In dehydration the i.v. fluid was used in 100% of the encounters in Dhamrai UHC in Dhaka district prior to intervention which was reduced to 50% by 3 MTP meetings. In Keranigonj UHC the use of i.v. fluid was reduced to 0% from a baseline value of 89% of the encounters by 4 MTP meetings. In all these cases the oral saline substituted the i.v. fluid. In the Savar UHC, the use of injectable antibiotic in dehydration was reduced to 0% from 22.2% of the encounters by three MTP meetings. In Dhamrai UHC the use of injectable antibiotic in severe dehydration was reduced to 7% from 78.5% of the encounters by 3 MTP meetings. In the same UHC in injury, use of analgesic and antibiotic injections on day 1 was 100% of the encounters which was reduced to 45% by four MTP meetings. There was a substantial decrease in the use of injectable analgesic and antibiotic in injury in Dohar UHC by the MTP. The decrease was from a baseline value of 86% to 45% on day 1, from 75% to 19% on day 2 and from 75% to 6% on day 3. In Karanigonj UHC the injection use in injury was reduced to 38% from 73%. Similarly injection use in Nawabgonj UHC was brought down to 45% from 80% by the MTP. In the same UHC use of i.v. fluid in injury was reduced to 37.5% from 75% by the intervention.

It was difficult to reduce the use of injectable antibiotics in severe pneumonia due to perceived seriousness of the disease, even than the use of injectable antibiotics was reduced to half of the baseline values in Savar and Dohar UHCs by four MTP meetings. In Nawabgonj UHC the injection use in severe pneumonia was greatly reduced by 2 MTP meetings; then the intervention had to be stopped owing to opposing intervention for ARI by the DG, Health.

In summary, the MTP strategy could reduce the use of injections substantially in different health conditions in the hospitals of UHCs of Noakhali and Dhaka districts of Bangladesh.

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## **A study on the injecting drug users in South India : HIV Infection Associated With Incarceration And Tattooing Among Community-Based Injecting Drug Users In Chennai City, Tamil Nadu , India**

Chandra Pauline Dinakar 1 , Roshanara 2, Ramachandra Sundaralingam 3

The intertwined epidemics of HIV/AIDS and injecting drug use are among the most vexing public health problems in India. India has had a sharp increase in the estimated number of HIV infections, from a few thousand in the early 1990s to around 3.1 million including children and adults as victims of HIV/AIDS in 2007. Drug abuse is on the rise and is adding fuel to the HIV scenario in India. Injecting Drug Usage (IDU), tattooing and needle sharing behaviour was found to be substantially prevalent among the frequently incarcerated drug users visiting the community based organizations and the drop-in centres in Chennai city. In today's industrialized culture, tattoos and piercing are a popular art form shared by people of all ages. Body piercing and tattoos are a popular form of body art that have been practiced throughout history by various cultures. (Abbasi, Kamran, 2001). They are also indicative of a psychology of self-mutilation, defiance, independence, and belonging, as for example in prison in-mates, ex-prisoners or gang cultures. Tattooing was significantly associated with older age, living in a single-parent household, and lower socioeconomic status (Timothy A. Roberts, MD and Sheryl A. Ryan, MD, 2002). Tattooing was strongly associated with peer substance use and constitutes a part of their lifestyle. They involve themselves in risk behaviours such as sharing equipments used for tattooing purposes or injecting drugs, unaware of transmission of HIV through contaminated needles and through left over 'fresh-blood remains' in the ink pot as a result of tattooing of the previous client. Frequent incarceration is a salient feature of the injecting drug users who are in the hot pursuit for money to buy drugs; in the process they are arrested for criminal activities. This study throws light on the HIV infection among the IDU population, who are the most vulnerable and neglected population in Chennai city, Tamil Nadu state, India.

**Objective:** To determine the prevalence and correlates of HIV infection among a sub-sample of frequently incarcerated community-based injecting drug users (IDU) with body-tattooing behaviour, in Chennai city, India.

**Methods:** 180 IDU were recruited from a drop-in center and its neighboring parks and streets in Chennai city. Participants were interviewed using a structured questionnaire regarding their sociodemographics and HIV risk characteristics. Data were analyzed using  $\chi^2$  and multiple logistic regression to estimate odds ratios (OR) and 95%

confidence intervals (CI). Quality of life (QOL) of the injecting drug user was rated using WHOQOL-BREF field instrument.

Results: The prevalence of HIV infection is 60.5% among male injecting drug users (very high when to 31.6% in 2004). 96% of the injecting drug users who participated in this study had body tattoos and were involved in frequent sharing of equipments during body tattooing. In the multivariable analysis, a history of shared drug injection inside prison and that of multiple incarcerations were associated with significantly higher prevalence of HIV infection.

Conclusions: The prevalence of HIV-1 infection has reached an alarming level in Chennai city, Tamil Nadu, India among IDUs with frequent incarceration-related and tattooing exposures which proved to be the main correlates of HIV-1 infection. Urgent and comprehensive harm reduction and HIV /AIDS awareness programs for injecting drug users in prison and those in the community of Chennai city are of prime importance to prevent further transmission of HIV infection; critical need for medical nutrition therapy (MNT) in order to improve their nutritional status and the quality of life of IDUs.

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## Theme 2: Improved access by developing countries to safe injection technologies: the role of industry.

Chair: Steffen Groth      Rapporteur: Darin Zehrung

The group was invited to discuss and answer the following questions:

### **The role of WHO**

- How could WHO support Member States with limited economies in improving access to safe, good quality injection devices?
- Recommend the use only of injection devices with safety features in all WHO programmes ?
- Recommend and assist Member States in implementing transparent tendering and purchasing policies?
- Assist Member States in the technology transfer of all types of syringes with safety features for therapeutic injections, in conformity with current WHO practice in relation to immunization auto-disable syringes, for which terms of reference for the role of WHO have been developed ?
- Call on manufacturers of safe injection devices to introduce differential pricing strategies?

### **The role of Industry**

How could industry help countries with limited economies in improving access to safe, good quality injection devices?

- How could the vicious circle of demand decreasing the price be broken when the actual price is the major barrier to increasing the demand?

- Could industry meet the demand for safe injection devices?
- Technology transfer?

**How could WHO partner with Industry** in making safe injection devices more accessible to member states?

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## **Plastic Hypodermic Needles: An Update**

Jonathan Colton and Eric Busillo, (Georgia Institute of Technology)

Significant potential for plastic hypodermic needles exists as an alternative to current steel needles, especially in developing regions where proper needle disposal is problematic. Needle reuse needlessly causes tens of millions of hepatitis and HIV infections each year. Plastic needles may reduce reusability. They may also increase the opportunities for safe medical waste disposal by removing metal from the medical waste stream, hence making it easier to reprocess plastic needles and syringes into useful products such as car battery cases and pails.

This talk presents the design, fabrication, and testing of one type of plastic hypodermic needles. Plastic hypodermic needles were tested in rubber skin mimics and their penetration and friction forces were measured. Lubrication coatings were applied to the needles to determine their effect. Steel hypodermic needles also were tested under the same test parameters. The experimental results will be presented and compared to each other and to theoretical predictions.

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## **UNICEF experience. Further Access to Injection Safety by Introducing Re-use Prevention Featured (RPF) Syringes for Reconstitution of Vaccines**

Edward Hoekstra, (UNICEF), Annika Salovaara, (UNICEF)

In 2006, UNICEF announced a new policy on Immunization Injection Safety, the introduction of re-use prevention featured (RPF) syringes for reconstitution of vaccines as an option to country programs. The syringes would be offered in 2008 and by 2010 all mixing syringes purchased by UNICEF will be RPF only.

UNICEF has fully endorsed and implemented the Use of Auto-Disable Syringes in Immunization Services as recommended in the WHO-UNICEF-UNFPA Joint Statement of 1999. The bundling policy has resulted in, that for each vaccine dose, sufficient numbers of AD syringes, reconstitution syringes and Safety boxes is ensured.

One gap in this strategy, however, is in the reconstitution of lyophilized vaccines. Measles, BCG, and several other vaccines are commonly distributed in lyophilized form. If the syringe is used and disposed of properly, this procedure is not problematic; however improper practices are frequent and can cause significant risks of unsafe injection.

The WHO pre-qualifications of RPF syringes and the increased availability of this type of syringes has enabled UNICEF to bring the Injection Safety concept one step further, to also include syringes for reconstitution of vaccines. Observations world wide have shown that the bundling concept is not always ensured all the way down to end destination. Instead, in the field we often find one reconstitution syringe available for every 2-6 vials, if that. Also, although not a recommended practice, the reconstitution syringe is sometimes used to mix the vaccine; after injecting the diluent into the vaccine vial. Health workers repeatedly draws up and ejects the mixture several times to ensure it is well mixed. If not discarded immediately, remnants of the vaccine in the syringe can support microbial growth and become contaminated. If the syringe is subsequently reused to mix a new vial of vaccine, contamination can be introduced into the new vaccine and injected into another patient, potentially causing adverse events. The used reconstitution syringe could be used subsequently for injection into patients as well as reconstitution, possibly transmitting bloodborne pathogens from a patient to a multi-dose vial, then to additional patients. These practices are unacceptable.

In August 2007, PATH monitored and managed the pilot introduction of four RPF reconstitution syringes in a measles campaign in Lombok, Indonesia in collaboration with the Ministry of Health of Indonesia. All RPF reconstitution syringes needed for training and for the campaign were supplied by UNICEF who also provided financial support for the study. The results were extremely positive and UNICEF will tender for RPF syringes in the coming months.

In 2008, Nepal will be the first country to use the RPF mixing syringes country wide during their measles follow-up campaign.

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## **Reuse Prevention Feature Syringes for Reconstitution: Operational Study in Indonesia and UNICEF plans for introduction.**

Edward Hoekstra (UNICEF) and Jessica Fleming (PATH)

To prevent the possibility of reconstitution syringe reuse, UNICEF intends to supply all immunization programs with syringes with reuse prevention features (RPF syringes) for vaccine reconstitution beginning in 2008. To prepare for global introduction, UNICEF contracted PATH to conduct a field evaluation of three World Health Organization (WHO) prequalified RPF syringes used during a measles campaign in Lombok, Indonesia, in August 2007. The objective of the field evaluation was to identify the training and introduction requirements of these syringes and establish an understanding of their acceptability, performance, and safety during field use.

In 2006, WHO and the International Organization for Standardization (ISO) completed specifications for curative RPF syringes (ISO 7886-4). These RPF syringes are similar to AD syringes but allow more flexibility for a wider variety of uses and variable dose sizes. They are appropriate for reconstitution because they are not intended to automatically disable and may require user compliance to do so. Three have been prequalified by WHO and were evaluated in this study: the Kojak Selinge from Hindustan Syringes &

Medical Devices, Ltd. (HMD); the SoloMed™ from Becton, Dickinson, and Company (BD); and the VanishPoint® from Retractable Technologies, Inc.

**Study Methodology:** The Ministry of Health (MOH) of Indonesia and PATH collaborated in designing and implementing the study, with support from UNICEF. PATH developed the study protocol with review by UNICEF and the MOH.

The study took place in Lombok, Indonesia, during the August 2007 measles campaign for children ages 6–59 months. Each RPF reconstitution syringe was introduced into one of three districts: East, West, and Central Lombok. Although technically a separate district, Mataram, the provincial capital city, was included as part of West Lombok district for this evaluation. Convenience samples of 30 health workers in each of three districts were surveyed. Evaluation sites were selected to provide a broad representation of different facility settings, economic status, and levels of infrastructure.

**Conclusions and Recommendations:** RPF reconstitution syringes are well received by managers and health workers; improve injection safety; fit easily into country logistical systems; and, although they are easy to learn to use, will require sufficient training support. The study found all three types of WHO prequalified RPF reconstitution syringes to be highly acceptable for use in immunization campaign settings. Results suggest these syringes will increase injection safety by preventing reuse of reconstitution syringes. The RPF reconstitution syringes improved health worker satisfaction because of the added measure of safety compared to a standard syringe, since RPF syringes could not be reused, thus reducing possibilities of vaccine contamination or injection use.

As UNICEF moves forward with global introduction of RPF syringes for reconstitution, adequate training will be the key factor to ensuring successful introduction. This study indicates that hands-on training demonstrations and user practice with two or three actual syringes and vaccine vials is essential to ensure successful introduction of RPF syringes in immunization settings.

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## **Evaluation of two types of safety syringes**

Jessica Fleming, PATH

PATH has recently completed three evaluations of safety syringes: two evaluations of a retractable syringe, and a separate evaluation of three commercially available, non-reusable reconstitution syringes. Acceptability, performance, and system-fit of the devices were assessed in three countries:

In one province of South Africa the routine use of retractable syringes in a variety of clinical settings was evaluated. A cost assessment was included; In Peru, retractable syringes were evaluated during a measles/rubella campaign in urban and rural settings; In Indonesia, existing safety syringes for vaccine reconstitution were evaluated as part of a measles campaign. The aim was to characterize the introduction issues of these syringes to prepare for UNICEF's goal to supply only non-reusable syringes for vaccine reconstitution in 2008.

In all three evaluations, the majority of respondents (health workers, waste handlers, and supervisors) preferred the respective safety syringe to standard disposable syringes.

Health workers using the retractable syringe reported a decrease in needlestick injuries and felt safer when using the retractable syringe. Supervisors reported that the retractable syringes increased nurses' willingness to treat HIV-positive patients, and medical waste practices were also perceived as safer. The cost study showed that the retractable syringe was cost saving.

The majority of vaccinators using the three types of non-reusable reconstitution syringes reported that they felt the non-reusable reconstitution syringes were safer and as easy or easier to use than standard reconstitution syringes. Program managers reported that the safety reconstitution syringes did not cause any changes to the EPI program implementation, or to the logistics arrangement.

PATH will share the results, cost analysis, and lessons learned from these three evaluations of safety syringes.

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## **PATH's experience working with industry**

Darin Zehrung (PATH) and Lisa Hedman (PATH)

PATH has established experience working with manufacturers in support of the development and implementation of safe injection technologies for developing-country and injection safety initiatives. Our goal for private-sector collaboration is to achieve maximum sustainable benefit for public health through engaging private-sector collaborators to apply their development, manufacturing, and distribution strengths toward innovative technologies. We focus especially on innovations that would not be a typical focus of private industry.

Economic sustainability is a key consideration and PATH works to ensure that commercial firms are also able to achieve an appropriate return of investment when the technology is fully scaled up for high-volume manufacturing and distribution. PATH efforts have also included working closely with injection programs and manufacturers to assess costs, identify issues impacting usability and demand, and support improvements to supply chain management.

This presentation will provide examples of successful projects and various means of working with industry to support sustainable solutions and advancements in injection safety, including our work with syringe manufacturers under the Making Medical Injections Safer project and work with developers of alternative immunization technologies, such as needle-free injection (NFI).

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## **Theme 3 : Review strategies on how to measure the impact of injection safety and related infection control strategies at country level**

Chair: Anthony Battersby    Rapporteur: Karen van Roekel

Objectives and main outcomes of the session work:

The purpose of this work group was to try to identify simple indicators that can show real benefits for both individuals and society as a whole, and to show that investment in safe injections leads to benefits for society.

The implementation of the national strategies for the safe and appropriate use of injections is monitored through a combination of input, process and outcome indicators.

- Which indicators are the most relevant for each component of injection safety i.e. the safety of the injection recipient, the safety of the health care worker and the safety of the community ?
- Which indicators should be used to monitor the impact of injection safety strategies on the burden of disease transmitted through unsafe injections?
- How can they be incorporated into indicators routinely used to monitor the technical quality of health systems?
- How the data should be collected and who should collect it?
- What are the sources of the data?

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## **Medical Injection Safety: Scaling up, the Namibia Experience**

Frantz Simeon, Sylvia Gantana, Hilya Haufiku, Ellah Munkonze, (LLC University Research Co., LLC)

Background: Under the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), the Namibian Ministry of Health and Social Services (MOHSS) with University Research Co., LLC (URC) technical assistance is implementing several policy and programmatic interventions to improve medical injection and waste management practices in the country. MOHSS, together with URC, conducted a rapid baseline assessment in June 2004 to identify gaps in existing injection-related practices. Interviews were conducted with health-related policy-makers, health managers, health care providers (public and private), and community members. The analysis looked at quality of services, demand for and provision of injections, compliance of providers with safe injection practices, and other aspects related to injections. The baseline assessment showed a number of quality gaps: over-prescription of medical injections, improper injection and waste disposal procedures, among others.

To change healthcare provider practices, the Medical Injection Safety Program is using the collaborative approach to develop and test, as well as rapidly scale-up best practices. Under the program, four major strategies are being used: behavioral change communication (BCC) targeted at prescribers and the general public to decrease prescription of and demand for injectable medication; compliance with infection prevention and control practices to reduce opportunities for transmission of blood-borne pathogens; commodity and logistics aimed at strengthening the procurement system and ensuring the availability of injection equipments to health facilities; waste management to improve waste disposal practices. Performance at provider and facility level is reviewed on a monthly/quarterly basis to measure compliance with guidelines, and outcome of various interventions.

Results: Program interventions have produced dramatic results. URC supported the MOHSS to establish an enabling environment through training, supportive supervision, procurement of injection equipment, and development of guidelines and policies. Since the program inception 3 years ago availability of safe injection guidelines rose from 57% to 93%, of Post Exposure Prophylaxis (PEP) guidelines from 35% to 96%. A total of 3106 healthcare practitioners have been trained. Practices on injections preparation and administration have improved. Sharp injuries have decreased significantly while access to PEP after injuries has increased. The proportion of facilities where needles are removed from multi-dose vials has improved from 47% to 89%. The use of barriers when opening glass vials has improved from 51% to 88%. Awareness creation about risk of Hepatitis B resulted in improved vaccination. The average number of types of injections prescribed per patient per treatment has declined from 1.42 to 0.5 in pilot regions. Compliance with guidelines has increased. Ten regions were supported to develop Interim Waste Management Guidelines. The National Waste Management Policy is being finalized. The community BCC strategy is being implemented through a network of grassroots organizations. The Program, which started with a pilot phase in 5 regions, is currently covering all 13 regions.

Conclusions: During its three years of implementation, the program has sparked major positive changes in the whole Healthcare system of Namibia.

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## **Reassessment of Injection Practices At Healthcare Facilities In Mongolia**

G.Soyolgerel, D.Davaasuren, B.Tumurbat

Background: All types of hepatitis infections are localized among the population of Mongolia, serving not only as main cause of chronic hepatitis, liver cirrhosis and primary liver cancer, but also health and financial loss for the population. The rapid assessment of injection practices in Mongolia (Sophie Logez and G.Soyolgerel 2001) identified that the general population prefer to get injection, the average number of annual injection per person was 13 and there was lack of proper management of hospital sharps waste.

Since that time Ministry of Health and the health facilities have worked to implement the WHO strategy on "Safety Injection". Within the framework of that implementation a number of actions was conducted achieving good results in improving hospitals sharps waste management and reducing unsafe injection practices. We conducted an assessment of injection practices in Mongolia to define the achievement of the last 5 years.

Study design: The study aimed to assess injection practices at primary healthcare facilities of Mongolia through determining level of provision of injection devices and waste management at the health facilities, identifying unsafe injection practices and to develop recommendation to improve the safety of injections, and identifying changes in the average number of injection per year.

The study was conducted between 3 and 17 July of 2006 at Sukhbaatar and Songinokhairkhan districts of UB city and Bulgan, Dornogobi, Zavkhan, Uvurkhangai, Tuv, Khovd, Khentii and Darkhan-Uul aimags. In total of 101 health facilities, 155

physicians, 160 nurses and 200 citizens from 2 districts of UB city and 8 aimags participated in the cross-sectional study. The WHO developed standard data collection sheets were adapted to the Mongolian context. Injection devices and their provision were checked, injection cases were observed and injection administrators, physicians and members of the public were interviewed.

**Main findings, conclusions and recommendations:** The healthcare professionals used disposable syringes, administer the injections at clean tables, do not sort out the dirty sharps by hand and used devices are disposed in safety boxes, an improvement in injection practices. The provision and stock of single use injection devices also had improved. 70% of the health facilities had more than 7 days stock of syringes and needles, while 31 had less than 7 days stock in hand.

Most of the facilities (75%) did not have overloaded and opened safety boxes as well as (85%) facilities did not use any open or plastic boxes. Used syringes and needles were not observed around the health facilities (76%) or their incinerators. (85%). Healthcare facilities did not store overloaded safety boxes at open air. Hospital sharps waste management had improved and manufactured and handmade safety boxes were provided.

The main achievement was the number of injection per year per person which decreased by 38.5% from the previous assessment findings.

Some weak points were explored during the assessment including: insufficient hepatitis B immunization coverage of health staff, risky behavior of the healthcare staff such as two handed needle recapping, and a high number of reported needle stick injury.

**Recommendations:** Expand IEC on safe injection practices for healthcare staff and the general public, develop a national strategy on safe injection with more focus on regulations to prevent and monitor needle stick injury, ensure involvement of quality managers and teams in hospitals, increase hepatitis B immunization coverage of the health staff, and take actions to promote appropriate health care professional behavior, and rational use of funding for injection safety practice.

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## **Impact assessment of injection safety - the economic perspective**

Dan Chisholm, PhD (WHO)

When thinking through the potential benefits or impacts of safer injection policies and practices in countries, it is important to keep in mind the economic and financial dimension. This is not only because safe injection practices may bring substantial economic benefits in terms of avoided disease and improved productivity, but also because strategic planning of services depends in part on appropriate budgeting and resource planning.

Assessment of resource needs for and expected outcomes from safe injection policies is enshrined within the process of economic evaluation, which provides a framework for thinking through different ways of allocating resources. Intervention costs that get

considered in the analysis of injection safety include the injection devices / equipment themselves, distribution costs, health service use and programme management costs. Benefits of intervention include reduced infections, reduced deaths / illness, and enhanced productivity.

An example of an economic analysis of injection safety that was undertaken at the international level is the study by Dziekan et al (2003), which considered the respective costs and effects of safe versus appropriate use of injections in a number of WHO world regions. Interventions were found to be very inexpensive to implement yet have the potential to dramatically reduce the epidemiological burden associated with unsafe and inappropriate injection use. In a separate economic analysis, Ekwueme et al (2002) assessed the disease costs of injection devices in sub-saharan Africa, and showed how the cost of devices alone provides only part of the story in terms of costs and future benefits; in particular, they showed that current productivity losses and future potential gains in productivity resulting from effective intervention account for the lion's share of the overall impact.

In conclusion, there is a need to better document the economic impact (burden) of unsafe injections, in terms of medical care costs incurred as a result of infections from and lost productivity resulting from unsafe injection. There is also a need to place the scaled-up response to this burden on a more solid financial footing, in terms of planning how much expenditure is required for device purchase, usage, maintenance and safe disposal, plus awareness campaigns, training and programme management. And finally, there is a need to evaluate the benefits of intervention, both in health terms (averted infections and associated morbidity / mortality [HIV, Hep B, Hep C]) and in economic terms (reduced medical care costs incurred as a result of unsafe injection, and reduced lost production).

Dziekan G, Chisholm D, Johns B, Rovira J, Hutin YJF (2003). The Cost-Effectiveness of Policies for the Safe and Appropriate Use of Injection in Health Care Settings. *Bulletin of the World Health Organization*, 81: 277-285.

Ekwueme et al (2002). Disease costs of injection devices in SSA. *Bulletin of the World Health Organization*, 80: 859-870.

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## **Monitoring and Evaluating the Impact of Injection Safety Initiatives**

Joseph Perz (Centers for Disease Control and Prevention, Atlanta, GA)

Measuring progress in injection safety is challenging, but essential for marshaling support for continued or expanded efforts. In 2003, WHO/SIGN provided a useful framework: "Managing an Injection Safety Policy," available at [http://www.who.int/injection\\_safety/toolbox/en/ManagingInjectionSafety.pdf](http://www.who.int/injection_safety/toolbox/en/ManagingInjectionSafety.pdf).

This document described a process or "quality cycle" that relies heavily on monitoring and evaluation. Baseline measures are necessary to establish the scope of a country's injection safety problem and establish the gap between existing and ideal conditions. Monitoring and evaluation at future points in time permit programs to measure progress and guide improvements. While approximately 80 national injection safety assessments

have been conducted (using the "Rapid Assessment and Response Guide" or "Tool C"), relatively few follow-up assessments have been conducted, hampering efforts to demonstrate overall program impacts.

Another key consideration is that the ability to measure and evaluate progress is limited by the scope of the baseline survey. For example, it is not possible to measure reductions in disease burden if this burden was not measured in the first place. The 2003 Managing an Injection Safety Policy guidance focused on injection practice outcomes, not disease outcomes, as key indicators. While SIGN did develop and evaluate a tool for direct assessment of the association between injections and infections [http://www.who.int/injection\\_safety/toolbox/en/TOOLD4-0.pdf](http://www.who.int/injection_safety/toolbox/en/TOOLD4-0.pdf), its implementation is technically difficult, particularly at the country level, and use has been limited. A mathematical model that indirectly estimated injection associated disease burden was published as part of the 2000 Global Burden of Disease study [Int J STD AIDS. 2004 15:7-16]. One appeal of such a modeling approach is that the key input variables (i.e., average annual number of injections per person and percentage injections given with non-sterile equipment) are often available from country level injection safety assessments.

As results from more follow-up assessments become available, they may be used to produce revised model output and to estimate improvements in health. In any event, data from follow-up assessments are much needed for the evaluation, improvement and growth of safe injection programs.

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## Theme 4: Comprehensive strategies for the prevention of blood borne pathogens transmission in health-care settings

Chair: Jorge Mancillas    Rapporteur: Dr. Fortune Ncube

Participants were invited to discuss the following:

- How could infection control strategies to prevent BBP transmission be integrated into health systems?
- In resource poor settings/ emergencies, should we opt for risk elimination or risk reduction?
- Overall prevention strategies and update on standard precautions
- Mapping unsafe practices and their role in BBP transmission: what do we know? What don't we know? How to access the information?
- Proposed WHO comprehensive strategy for hepatitis prevention and control
- Implementation of HCW Immunization against hepatitis B and PEP for HIV at country level

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## **Implementing safe injections programs: The Mexico experience**

Javier Barroso

Presentation of a national project called PLANETAS (National Platform of Enterprises and Workers Associated to Health). This project started September 1st, 2007.

The project is designed to incorporate all hospitals in the country, both private and public which manifest their interest in developing a system of monitoring accidents with sharps through EPINet (Exposure Prevention Information Network), which is currently used in over 30 countries. The hospitals that participate will have more information about these sharps injuries, because EPINet allows them to know which type of workers are getting injured more often, the device used when the accident happened, if it was contaminated with blood, if the patient was known, the place where this happened, the procedure which was used and other useful information. This information will allow them to take measures in the prevention of future accidents. The hospitals that participate will receive consulting and training in the use of EPINet and in the epidemiological surveillance of accidents with sharp objects.

The requirements, obligations and benefits of the hospitals and PLANETAS willing to be part of the project will be presented as an example of what can be done on a nationwide basis at low cost.

We propose that this project is incorporated to the quality programs of all hospitals to boost the concept of safer hospitals, for patients as well as for the staff. Today, three of the most important groups of hospitals nationwide have shown interest in participating in this project. We have had meetings with them. The hospitals of Petroleos Mexicanos (PEMEX) are thinking of adopting EPINet throughout Mexico.

PLANETAS will also take part in this project as well as companies which manufacture or trade with safety devices with the purpose of giving more info about their products among hospital staffs. These companies will be able to manufacture better products if they know the specific needs of all hospitals. Today, three companies which manufacture or distribute safety devices as well as one company which trains health workers, have shown interest in taking part in the project.

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## **Performance and Acceptability of Needle Removers in the Guyana Context**

Donna Bjerregaard, Joyce Lyons (Initiatives Inc.)

To provide the MOH of Guyana with evidence to make informed decisions about expanding needle remover use, the PEPFAR-funded Guyana Safer Injection Project (GSIP) conducted an assessment of the use, acceptability and relative cost of needle removers and sharps barrels it piloted at 18 sites. Guyana faces a dearth of effective options for safe sharps disposal. Disposal of safety boxes, and the needles they contain, is challenged by high water tables, ineffective burn boxes, dumping of boxes in rivers or

trenches and the placing of safety boxes in ordinary waste bins. This presents environmental and safety hazards for staff, patients and community members.

The assessment included observations of 34 needle removers and 16 sharps barrels, and interviews of service delivery and waste management staff at each site. No needlestick injuries were reported in the last 12 months at any of the sites. 94% (29) of needle removers were observed to be in good or excellent condition. 100% of providers and waste handlers felt the devices were easy to use and, more importantly, that use of the needle removal device and sharps barrel reduced their risk of needle stick injury. Maintenance was identified as a factor in needle remover efficacy with only 55% cleaned as required. Cost analysis found the annual per facility cost of the Balcan needle remover is US \$35.80, while the recently introduced BMDi Nomoresharps® cost came to US \$21.50/facility/year; a cost that would be further reduced to US \$11.34/facility/year by substituting safety boxes with plastic bags for disposal of defanged syringes.

The assessment results indicate needle removers and sharps barrels are a safe, acceptable and effective method for sharps disposal in the Guyana context.

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## **Improving occupational and patient safety in Russia.**

Alexey V. Bobrik (Open Health Institute, Moscow)

It is well-known that sharps injuries in medical institutions are associated with the occupational transmission of more than 20 blood-borne pathogens, including HBV, HCV, and HIV. Unfortunately in Russia occupational and patients safety has never been among the real priorities of health care system. Paradoxically the major current barrier is the outdated legislation that requires additional treatment of all medical wastes with disinfectants, which in practice leads to the manual disassembling of almost all used syringes by nurses. Another important problem is general weakness of safety culture, which is evidenced by the widespread noncompliance with the universal precautions. Both legal limitations and engrained practices also result in low use of modern devices with safety features.

Therefore, at the end of 2006 Open Health Institute (OHI) launched a comprehensive program on occupational and patients safety in healthcare settings. Within the framework of this initiative a detailed situation and needs assessment is currently being conducted in two Russian regions. Experts from OHI and Federal Health Service (Rosпотребнадзор) jointly work on the revision of outdated guidelines. Hundreds of health workers and decision makers already passed through awareness raising seminars and trainings on safe practices. Several dozens of pilot institutions have been provided with appropriate equipment and supplies.

Constantly increasing interest to the topic gives hope that this OHI's program will be an important step toward preventing nosocomial transmission of blood-borne infections and promoting safe working environment in Russian healthcare institutions.

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## **Hepatitis B virus immunization of health-care workers**

Susan Wilburn (WHO. Occupational Health)

World Health Assembly Resolution 60.20 ( 2007) on the Global Plan of Action for Workers' Health urged member states to pay special attention to the occupational health of health-care workers and called on WHO to develop and implement a campaign to immunize health-care workers against the hepatitis B virus. The Hepatitis B virus is one of the most prevalent and transmissible bloodborne pathogens with 40% of the burden of hepatitis disease among health-care workers resulting from occupational exposure through needlestick injuries and splashes with blood. In 2004 the Strategic Advisory Group of Experts (SAGE) for vaccines and immunizations recommended immunization of health-care workers as a targeted group at risk, in 2006 SIGN called for immunization of health-care workers and the 2006 World Health Report on Human Resources for Health called for the support and protection of the health workforce. In addition, the International Labor Organization Convention Number 149, Nursing Personnel Convention, and Nursing Personnel Recommendation (1977), recognized the vital role played by nursing personnel, together with other workers in the field of health, in the protection and improvement of the health and welfare of the population calls on members to adapt laws and regulations on occupational health and safety to the special nature of nursing work and of the environmental in which is it carried out.

Health care work is hazardous to the health and safety of health care workers. Hepatitis B is the most common bloodborne infection that health care workers are exposed to and the most transmissible. Among health care workers infected with hepatitis B, forty percent are estimated to be infected through an occupational exposure to blood through a needlestick injury or splash.

WHO recommendation on prevention of hepatitis B among health-care workers

- All health-care workers should receive 3 doses of the hepatitis B immunization according to WHO guidelines prior to starting work in a health care setting where they may become exposed to blood or other potentially infectious materials.
- Students in health professional programmes (nursing, medicine, dentistry, microbiology, etc) should receive the vaccine prior to starting any clinical rotation.
- Monitoring to ensure completion of all 3 doses is necessary as well as surveillance of occupational exposure and transmission.
  
- Prevention of exposure to bloodborne pathogens remains key because of the 3 major bloodborne diseases transmissible through a needlestick injury from a contaminated sharps or blood splash, hepatitis B, C and HIV; only hepatitis B has an effective, available immunization. HIV can be treated with anti-retrovirals and post-exposure prophylaxis is effective for preventing transmission of HIV, but no immunization currently exists for either HIV or the hepatitis C virus.

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Received abstracts not in program

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## **Injection safety in dental services**

Dr Habib Benzian (FDI World Dental Federation )

The FDI World Dental Federation is the global, authoritative voice of the dental profession representing almost 1,000,000 dentists worldwide in more than 136 countries. As health professional organisation the FDI is providing guidance to national dental associations, through continuing professional education programmes and policy statements, in order to implement appropriate infection control programmes wherever needed.

In dental practice injections are given for almost for every clinical treatment, since many procedures need proper anesthesia. This results in approximately 6 to 10 million injections per day performed by oral health professionals worldwide. Although surgical procedures in dentistry are often simple compared to other type of surgery, anesthesia through injections cannot be avoided. A pain-free treatment is considered a basic patient right. A particularity of injections in the dental settings are the frequent use of cartridge systems for anaesthesia.

Regarding waste management, programmes for dentistry can follow the same procedures as in every other health field. A typical dental clinic in western Europe produces on average 260kg of waste per year including 50kg of infectious material, 11kg of sharps and 2,5kg of solid material (mostly removed filling material and restorative work).

Oral health procedures are almost always intra-oral and therefore oral health professionals have limited access and visibility. This can result in improper use of needles. In the US around 200 dentists and 3000 dental assistants report injuries by sharps per year. Other possible adverse effects of injections include lingual nerve damages, needle rupture and allergic or toxic effect of the anesthetic.

While in developed countries much has been done to implement safe injection safety programmes, the situation in low resource settings is rather concerning with frequent reuse of needles and other unsafe practices.

Oral health professionals should be involved in every injection safety programme at all levels of policy development and implementation. The FDI provides extensive guidance on infection control and injection safety. Please visit our website at [www.fdiworldental.org](http://www.fdiworldental.org)!

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## **SIGNpost The Safe Injection Global Network Listserve**

Allan Bass (SIGNpost Moderator)

SIGNpost Began in October 1999, SIGNposting more than 50 weekly editions each year to some 900 subscribers around the world. Each edition of SIGNpost is equivalent to about 45 pages of text or nearly 2,000 pages each year. A 55 MB archive of all posts and key document files for download is maintained. Many subscribers share SIGNposts or selected posted items with non-subscribers. SIGNposts objectives are to provide for moderated discussion involving appropriate individuals throughout the world, who are responsible or could contribute to the development and implementation of safe injection strategies; the concise and facilitated dissemination and exchange of knowledge and experience in implementing safe injection; and to contribute to the development of consensus and actions leading to injection safety.

Recent topics ranged from national policy, pre-publication review of technical tools, strategy, and policy documents, country level activity, waste management technologies and policy, disease transmission and infection control, needlestick prevention, safe injection technologies, reducing medical injections, blood safety, needle-syringe programs, counterfeit injectables, studies and research, multisectoral collaboration, draft tools for review, new tools, new documents, key articles, publications, and abstracts, project activities, meeting announcements, funding opportunities, employment announcements, and information resources.

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## Day 3 Plenary: Summary Recommendations of Parallel Sessions

25 October 2007

Chair: Glenn Post

Rapporteur: Allan Bass

Two plenary sessions enabled the more than 100 experts from SIGN member organizations to reach consensus on these key recommendations for advancing global injection safety and related infection control.

The key meeting recommendations are presented in four sections: Guidance to Countries, Guidance to SIGN Members, Guidance to the Device Manufacturing Industry, and Guidance to the SIGN Secretariat.

### Guidance to Countries

1. Any country initiating an injection safety program should first conduct a baseline assessment to highlight the extent of the problem. The baseline should be used to identify the potential impact of safe injection strategies and inform program design for policy makers. Follow up studies are essential.
2. Countries should establish infection prevention and control programmes in all health care facilities. Countries should establish policies, guidelines and standard operating procedures (SOPs) and facilitate the application of best practices in health facilities. Training and support of healthcare workers and the provision of information to the public and civil society are essential.
3. Countries should recognize that Health Care Waste Management (HCWM) is a part of Infection Control programs and that waste management should be included in the mandate of Infection Control Committees. Consistent with the WHO core principles for HCWM, the recycling of healthcare waste materials must be an area of investment, and at health facility level, there should be a budget line item for healthcare waste management. Countries should monitor and review the volume of waste generated at facility level and conduct operational studies to determine whether waste volumes can be reduced by segregation and regular auditing.
4. Countries should adopt multimodal approaches to promote best practices, including training, the establishment of supportive policies, the reinforcement of product quality standards, the support of healthcare workers, and information to the public the engagement of community and patient organizations, and the media. Health worker training should, within nationally endorsed training standards, include: understanding blood borne viruses (BBV); awareness of risk of transmission; post exposure prophylaxis (PEP), PEP efficacy; and the benefits of immediately accessing PEP.
5. Countries should consider pooled, regional procurement, informed procurement networks, or other procurement consortiums to reduce prices through volume procurement. Ministries of Health should estimate their requirements for injection safety related commodities based on actual consumption patterns. Where consumption information is not available or highly unreliable, two types of information should be used for initial planning: National or other estimates of the number of injections per person per year should be used as the minimum, noting that syringes are routinely used for

non-injection purposes; and facility usage rates should be estimated by reviewing available stock and clinical records or through assessment interviews.

6. SIGN recommends that the identified useful indicators for health workers, patients, injection providers, waste handlers, community and patients be used for measuring and monitoring the performance, quality, and impact of injection safety and related infection control at country level. [See Annex n: indicators table]

7. Countries should measure injection safety and related infection control and monitor impact. Routine data sources such as supervisory visits; and adverse event following injection (AEFI) surveillance reporting may provide a source of data for measuring injection safety and infection control, but SIGN recognizes the inherent limitations in using routine data for outcome and impact indicators, and recommends that countries seek other sources of data. Useful indicators have been identified in SIGN Tool C, the waste management costing tool, the indicators table [in annex n] of this report, and should be added to supervision checklist forms and routine supervisory reporting systems. Written records such as prescriptions and treatment registers can be used to show reductions in unnecessary injections. Countries should improve routine supervision and the recording of injection related practices.

## Guidance to SIGN Members

8. SIGN members should strengthen and support the SIGN Secretariat and SIGN activities.

9. Recognizing concern with the growing numbers of home injections, SIGN members should explore technical options for home-based care.

10. SIGN members should support Ministries of Health in the development of monitoring and evaluation tools to follow up on their implementation of injection safety programs.

11. SIGN members should call on donor agencies and health programs providing countries with injectable medicines to provide matching quantities of safe injection devices and sharps boxes.

12. SIGN members should ensure inclusion of infection prevention and control and injection safety and related areas into global initiatives for HIV, TB, and malaria

13. SIGN members should collaborate with Ministries of Health to establish regional and in country focal points for injection safety and related infection control.

14. SIGN members should support the principles of health-care worker participation in the identification of hazards, preventive and control measures, as well as the evaluation, selection and implementation of needlestick prevention devices and other protective equipment.

15. SIGN members should promote the WHO Performance Quality Safety (PQS) standards and international standards for use as the baseline for quality and device standards.

16. SIGN members should assist countries with procurement planning, specifications, estimated needs, and transparent tendering and purchasing policies.

17. SIGN members should support the implementation of the World Health Assembly resolution on health care worker immunization against hepatitis B.
18. SIGN members should establish a large global initiative, modeled on GAVI, including international organizations, donors, industry, and civil society, aimed at the global application of safe injection practices and the use and safe disposal of injection devices with reuse prevention features and devices with sharps injury prevention features in medical services in developing countries.
19. SIGN members should commission and engage in research and development of injection equipment materials recycling technologies. Technologies for making used devices safe at health facilities are an urgent priority.
20. SIGN emphasizes that safe injections are an indicator of quality of care and recommends that SIGN members remain focused and actively seek to measure progress towards injection safety and safe disposal of health care waste using process and outcome indicators.
21. SIGN recognizes that Global Burden of Diseases estimates are needed for injection safety advocacy and SIGN should support the ongoing program to revise the GBD estimates by creating and sharing an inventory of worldwide injection safety assessments. Global Burden of Disease project should measure improvements in disease burden between the baselines of indicators previously used for GBD calculation vs. current status. Models should be updated using the recommended key indicators and compiled data from baseline and follow-up assessments to estimate the current status of improvements in disease burden relative to the 2000 GBD calculation
22. SIGN members should continue to work on metrics and systems to allow comparability of data; effective and appropriate surveillance systems for local and national levels; the investigation of adverse events to inform practice; and addressing problems with underreporting including confidentiality and blame.
23. Health Care Waste Management strategies must be a high priority activity for SIGN member organizations.
24. The 2008 SIGN meeting should include surveillance, alternatives to injectable medications, revisions to essential drug lists and other interventions with the goal of reducing injections, and needle free technologies as key topics for discussion.

## Guidance to the Medical Device Manufacturing Industry

25. Device manufacturers should employ all efforts to reduce the cost of injection devices with reuse and needle stick prevention features.
26. Device manufacturers should include as preferred injection device design criteria, devices with reduced smaller carbon footprint and lower resource depletion implications, provided that they meet the desired ISO and WHO Performance Quality Safety (PQS) standards and specifications.

## Guidance to the SIGN Secretariat Near Term: 2008 - 2009

27. The SIGN Secretariat should retain its focus on injection safety, recognize the risks of blood borne virus transmission in phlebotomy, venipuncture, and intravenous insertion procedures and support inclusion in all standards for injection safety, and recognize the priority of HCWM and defer the sterilization and the decontamination of reusable medical equipment to the SIGN Plus working group.

28. The SIGN Secretariat should increase its support for country injection safety assessment using revised Tool C. Additional sources of funding should be sought to enable SIGN to assist countries with follow up Tool C assessments and the incorporation of selected indicators in routine supervisory reporting systems.

29. The SIGN Secretariat should advocate for injection safety and related infection control through WHO networks and international professional associations.

30. The SIGN Secretariat should develop models and templates for global fund proposals for integrating infection control and healthcare worker safety into health systems strengthening, and evidence based packages of interventions.

31. The SIGN Secretariat should collaborate with infection control, waste management, and occupational health programmes to ensure that blood transfusion safety is incorporated into existing systems.

32. The SIGN Secretariat should support the development of a WHO comprehensive strategy for hepatitis prevention and control.

33. The SIGN secretariat should support the ongoing program to revise the Global Burden of Diseases estimates by creating and sharing an inventory of worldwide injection safety assessments.

34. The SIGN Secretariat should review the methodology for calculating the average number of injections per person using either a population-based measure or a routine record such as prescription records.

35. The SIGN secretariat should issue a statement on Re-Use Prevention syringes (RUP), as the International Standards Organization (ISO) is creating a separate Sharps Injury Prevention standard.

36. SIGN should assist country level National Regulatory Authorities, utilizing the Global Harmonization Task Force GHTF model as the regulatory framework, to build capacity to enable oversight.

37. SIGN should assist countries to utilize technology transfer agreements for in-country manufacture of syringes with safety features and other roles included in the 2004 terms of reference (WHO/EHT/04.14). SIGN should provide guidance on technology transfer, production, and ISO 13485 certification or equivalent.

38. The SIGN Secretariat should aggregate data and information on legislation and legal requirements for injection safety across countries and regions

39. SIGN should collate, document, and disseminate information on the effectiveness, cost effectiveness, and the overall need for current and new safe injection technologies.

40. The SIGN Secretariat should compile all current information to create a one stop web site incorporating all relevant guidelines, policies and directives on injection safety, occupational health and infection prevention and control, and health care waste management.

41. The SIGN Secretariat should develop and disseminate evidence based minimum acceptable best practice standards for the prevention of blood borne pathogen transmission in health care.

42. The SIGN Secretariat should review injection safety and needlestick injury in resource poor settings and for emergencies in all settings and develop options for risk elimination or risk reduction.

### Medium Term 2009 Onwards

43. The SIGN Secretariat should assist countries to develop national policies, legislation and a strategic framework for implementing safety and related infection control, within a sustainable recurrent cost funding stream. Key information on injection safety including cost and resource analysis should be part of the guidance given to ministries of health. Follow up studies are essential.

44. The SIGN Secretariat should work with countries and members to help identify and then eliminate barriers to accessing Post Exposure Prophylaxis (PEP).

45. The SIGN Secretariat should support the development of guidelines and a field manual for Hepatitis B vaccine immunization and post exposure prophylaxis PEP for any person with potential exposure in or outside of hospital, and for emergency responders.

46. The SIGN Secretariat should support the development of tools for workers to evaluate practices and products in their worksite that contribute to occupational exposures or lapses in infection control; tools for managers to determine if they have what is needed for effective infection prevention and control (IPC) and occupational health (OH): policy, practice, products, reporting systems, post-exposure prophylaxis (PEP), performance improvement supervisory tools and their integration into ongoing monitoring and evaluation.

## Annex 1: Useful indicators for health workers, patients, and the community

### 1. Useful indicators for health workers, patients, and the community

Average number of injections per person

% of injections observed in which the provider immediately disposed of the used needle and syringe in a puncture proof sharps container or used a needle remover

% of facilities surveyed with satisfactory disposal of waste inside and outside the facility, with no loose sharps inside or outside and no open or overflowing sharps containers

% of facilities surveyed with no loose infectious waste inside or outside the facility

### 2. Recommendation: Useful indicators for Injection providers

% of providers who report a needlestick injury in the previous 6 months

% of injection providers trained in injection safety

% of injection providers observed recapping injection devices

% of providers who have completed primary hepatitis B immunization (3 doses)

### 3. Recommendation: Useful indicators for Waste handlers

% of waste handlers interviewed who have been trained in the management of health care waste

% of waste handlers who have completed primary hepatitis B immunization (3 doses)

% of waste handlers interviewed who use of personal protective equipment

% of facilities in which waste is segregated at point of generation

% of facilities with safe final disposal methods

% of waste handlers who report a needlestick injury in the previous 6 months

### 4. Recommendation: Useful indicators for community and patients

% of providers observed who washed their hands with antibacterial soap and water or alcohol based hand rub before injection

% of injections observed in which the provider prepared injection on a clean table or tray

% of injections observed where each injection is given with a new needle and syringe from a sealed package, including a new needle and syringe from a sealed package for reconstitution of a medication, where applicable.

% of adverse events following injection (AEFI) of drugs or vaccine due to programmatic error

## Annex 2: Programme of Work

### ANNUAL MEETING OF THE SAFE INJECTION GLOBAL NETWORK (SIGN) INJECTION SAFETY AND RELATED INFECTION CONTROL 23-25 October 2007, Executive Board Room, WHO/HQ

23 October 2007	24 October 2007	25 October 2007
<b>Plenary</b>	<b>Parallel Sessions</b>	<b>Plenary</b>
Opening Session	<b>Theme 1:</b> Review strategies to improve implementation of injection safety and related infection control programmes at country level. <b>Room: E 110</b>	Summary reports and Recommendations of Parallel Sessions: Theme 1 Theme 2 Theme 3 Theme 4
<b>Session 1:</b> Updates on Injection safety and Infection Control	<b>Theme 2:</b> Improved access by developing countries to safe injection technologies: the role of industry <b>EB Room</b>	Conclusions of the meeting
<b>Session 2:</b> Integrating Injection safety into Health Systems	<b>Theme 3 :</b> Review strategies on how to measure the impact of injection safety and related infection control activities at country level <b>Room: M 105</b>	Closing Session
<b>Session 3:</b> Discussion of main recommendations from sessions 1 and 2	<b>Theme 4 :</b> Comprehensive strategies for the prevention of blood borne pathogen transmission in healthcare settings <b>Room : M 205</b>	
Welcome Cocktail		

### Day 1: Tuesday, 23 October 2007 Plenary

08:30-09:00	Registration	
09:00-09:15	Welcome and opening remarks	Steffen Groth, Dir/EHT
09:15-09:30	Election of Chair, Adoption of agenda, objectives of meeting and programme of work	Chair and participants
09:30-09:45	Report on last SIGN meeting recommendations	Selma Khamassi
09:45-10:00	Discussion	
10:00-10:30	<b>Coffee break</b>	
<b>Session 1 Updates on Injection safety and Infection Control</b>		
10:30-11:00	Update on Injection safety & Integrated Infection Control Strategies in Health Care Settings (Reports from : HIV/AIDS, Injection safety, Blood safety, Occupational Health, Patient Safety, Waste Management; Infection Prevention & Control in Healthcare, Immunization Vaccines & Biologicals)	SIGN Plus Working Group common presentation
11:00-11:30	Discussion	Plenary
11:30-11:45	Update on community safe injection initiatives worldwide	Garance Upham
11:45-12:00	Discussion	
12:00-12:15	Comparative risk factor assessment and unsafe Injections	Colin Mathers
12:15-12:30	Discussion	
12:30-14:00	<b>Lunch Break</b>	
<b>Session 2 Integrating Injection safety into Health Systems</b>		
14:00-14:20	Key Elements of Successful and Sustainable Injection Safety	Anthony Battersby
14:20-14:40	Discussion	
14:40-15:00	Successful implementation of an injection safety programme: the example of the MMIS project	Jackson Songa MMIS/ Kenya
15:00-15:20	Discussion	
15:20-15:40	East, Central and Southern Africa Health Community (ECSA-HC) Commitment to Infection Prevention and Control and Safe Injection Practices : Focus on ECSA Health Ministers Resolutions and their Implementation	Helen Lugina
15:40-16:00	Discussion	
16:00-16:15	<b>Coffee break</b>	
<b>Session 3 Discussion of main recommendations from Sessions 1 and 2</b>		
16:15-16:30	Presentation of main recommendations from Session 1 and 2	Meeting Rapporteur
16:30-17:30	Discussion	
17:30-18:00	Introduction to parallel sessions work - Objectives - Expected outcomes	Selma Khamassi
18:30-20:00	Welcome cocktail	All participants

**Day 2 : Wednesday 24 October 2007 Room: E 110**

**Theme 1: Review strategies to improve implementation of injection safety and related infection control programmes at country level**

**Chair: Pr Shaheen Mehtar**

09:00-09:15	Policy development and implementation: The Uganda experience	Victoria Masembe
09:15-09:30	Discussion	
09:30-09:45	Injection safety alliance: developing partnerships and providing training in Pakistan	Lubna Samad
09:45-10:00	Discussion	
10:00-10:15	Smart Injection Programme proposed by SafePoint Trust	Marc Koska
10:15-10:30	Discussion	
<b>10:30-10:45</b>	<b>Coffee break</b>	
10:45-11:00	WHO Concept paper on healthcare waste management	Yves Chartier
11:00-11:15	Discussion	
11:15-11:30	Results of syringe consumption monitoring: 6 MMIS countries	Ousmane Dia
11:30-11:45	Discussion	
11:45-12:45	Group discussion	
<b>12:45-14:00</b>	<b>Lunch break</b>	
14:00-14:15	Monitoring/Training/Planning strategy in Dhaka Hospital, Bangladesh	Azad Chowdhury
14:15-14:30	Discussion	
14:30-14:45	Monitoring/Training/Planning strategy in Zhuhai Hospital, China	Tang Jingbo
14:45-15:00	Discussion	
15:00-15:15	A study on the injecting drug users in South India	Chandra Pauline Dinakar
15:15-15:30	Discussion	
<b>15:30-16:00</b>	<b>Coffee Break</b>	
16:00-18:00	Group discussion and preparation of recommendations	Group participants

**Day 2: Wednesday 24 October 2007 EB Room**

**Theme 2 : Improved Access by Developing Countries to Safe Injection Technologies: the Role of Industry**

**Chair: Steffen Groth**

09:00-09:15	Plastic Hypodermic Needles: an update	Jonathan Colton
09:15-09:30	Discussion	
09:30-09:45	Public-private partnership on RPF recycling	Tina Norgard
09:45-10:00	Discussion	
10:00-10:15	Improved access by developing countries to safe injection technologies: UNICEF experience	Edward Hoekstra Annika Salovaara
10:15-10:30	Discussion	
<b>10:30-10:45</b>	<b>Coffee break</b>	
10:45-11:00	PATH's experience working with industry	Darin Zehrung Lisa Hedman
11:00-11:15	Discussion	
11:15-11:30	Evaluation of two types of safety syringes	Jessica Fleming

11:30-11:45	Discussion	
11:45-12:45	Group discussion	
<b>12:45-14:00</b>	<b>Lunch break</b>	
14:00-15:00	Q&A on WHO legal framework in working with the private sector	Anne Mazur
15:00-15:30	Group discussion	
<b>15:30-16:00</b>	<b>Coffee Break</b>	
16:00-18:00	Group discussion and preparation of recommendations	

**Day 2: Wednesday, 24 October 2007 Room M 105**

**Theme 3 : Review strategies on how to measure the impact of injection safety and related infection control strategies at country level**

**Chair: Anthony Battersby**

09:00-09:15	HCWM :best practices in Philippines	Ruth Stringer
09:15-09:30	Discussion	
09:30-09:45	Scaling up medical injection safety: Namibia experience	Frantz Simeon
09:45-10:00	Discussion	
10:00-10:15	Reassessment of injection practices in Mongolia	Tumurbat Byambaa
10:15-10:30	Discussion	
<b>10:30-10:45</b>	<b>Coffee break</b>	
10:45-11:00	Pakistan National Programme for Control and Prevention of Hepatitis: progress update	Shareef Khan
11:00-11:15	Discussion	
11:15-11:30	Cost effectiveness evaluation of injection safety strategies	Daniel Chisholm
11:30-11:45	Discussion	
11:45-12:45	Group discussion	
<b>12:45-14:00</b>	<b>Lunch break</b>	
14:00-14:15	Monitoring and Evaluating the Impact of Injection safety Initiatives	Joseph Perz
14:15-14:30	Discussion	Arshad Altaf
14:30-14:45	Healthcare transmitted hepatitis B and C in Pakistan	
14:45-15:00	Discussion	
15:00-15:30	Group discussion	
<b>15:30-16:00</b>	<b>Coffee Break</b>	
16:00-18:00	Group discussion and preparation of recommendations	

**Day 2: Wednesday, 24 October 2007 Room M 205**

**Theme 4 : Comprehensive strategies for the prevention of blood borne pathogens transmission in health-care settings**

**Chair: Jorge Mancillas**

09:00-09:15	Needle stick injuries in Zambia	Owen Simwale
09:15-09:30	Discussion	
09:30-09:45	Implementing safe injections programs, Mexico experience	Javier Barroso
09:45-10:00	Discussion	
10:00-10:15	Needle remover assessment in Guyana	Donna Bjerregaard
10:15-10:30	Discussion	
<b>10:30-10:45</b>	<b>Coffee Break</b>	
10:45-11:00	Improving occupational and patient safety in Russia	Alexey Bobrik
11:00-11:15	Discussion	
11:15-11:30	Preventing BBP transmission through safe blood transfusions	Noryati Abu Amin
11:30-11:45	Discussion	
11:45-12:45	Group discussion	
<b>12:45-14:00</b>	<b>Lunch break</b>	
14:00-14:15	HIV prevention in healthcare settings	Micheline Diepart
14:15-14:30	Discussion	
14:30-14:45	Proposed WHO comprehensive strategy for hepatitis prevention and control	Craig Shapiro
14:45-15:00	Discussion	
15:00-15:15	WHA resolution on the immunization of healthcare workers against Hepatitis B	Susan Wilburn
15:15-15:30	Discussion	
<b>15:30-16:00</b>	<b>Coffee Break</b>	
16:00-18:00	Group discussion and preparation of recommendations	

**Day 3: Thursday, 25 October 2007 Plenary EB Room**

**Chair: Glenn Post**

**Summary Reports and Recommendations of Parallel Sessions**

09:00-09:15	Summary report and Recommendations Theme 1	Group rapporteur
09:15-09:45	Discussion	
09:45-10:00	Summary report and Recommendations Theme 2	Group rapporteur
10:00-10:30	Discussion	
10:30-10:45	Coffee/Tea Break	
10:45-11:00	Summary report and Recommendations Theme 3	Group rapporteur
11:00-11:30	Discussion	
11:30-11:45	Summary report and Recommendations Theme 4	Group rapporteur
11:45-12:15	Discussion	
<b>12:15-13:00</b>	<b>Conclusions of the meeting</b>	
<b>13:00-13:30</b>	<b>Closing session</b>	

## Annex 3: List of Participants

Annual Meeting of the Safe Injection Global Network (SIGN)  
 Injection Safety and Infection Prevention and Control  
 23-25 October 2007, Executive Board Room, WHO/HQ, Geneva

### Country participants

#### African Region

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## Western Pacific Region

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**Key international/national organizations working on injection safety**

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