Safe Injection Global Network (SIGN) Annual Meeting Report

23-24 October 2000
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Annual Meeting Report

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Gezirah Sheraton, Cairo, Egypt
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Summary

The annual Safe Injection Global Network (SIGN) meeting held on 23-24 October 2000 in Cairo, Egypt, was an opportunity to review progress and challenges in the efforts of the coalition to achieve safe and appropriate use of injections worldwide.

Progress

Participants of the coalition have made a number of significant achievements in the 12 months that have elapsed since the launch of the network in October 1999. First, two countries, Pakistan and Egypt, constituted national multidisciplinary working groups to achieve safe and appropriate use of injections. Second, safer injection technologies, including auto-disable (AD) syringes, are increasingly in use. A specific manual has been developed to facilitate their introduction in developing countries and manufacturers of safer injection technologies have decided to form an association to facilitate exchanges with all partners. Third, key elements of national safe and appropriate use of injection policies have been outlined. A new assessment and evaluation tool is being pilot-tested in six countries, best practices guidelines are available as a draft for public comments and a toolbox for behaviour change is in preparation. Fourth, WHO's Immunization Safety Priority Project (ISPP) has developed critical indicators which will drive progress in immunization services' injection safety.

Challenges

In the future, SIGN participants agree to work more in the five following areas:

1. Identifying mechanisms to facilitate integration of their experience acquired through pilot and demonstration projects so that national policies to reduce unnecessary injections and achieve safe practices can be formulated and funded.

2. Encouraging rigorous evaluation of safer injection equipment and waste management options and dissemination of evaluation results to manufacturers, WHO, donors and purchasers to facilitate research and development, create international norms and standards and introduce newer technologies on a large scale.

3. Promoting a holistic approach to safe and appropriate use of injections that goes beyond the simple provision of supplies to also include behaviour change activities and sharps waste management policies that are budgeted and financed.

4. Providing technical assistance to WHO, donors, lenders, the Global Alliance for Vaccine and Immunization (GAVI) and country Inter-agency Coordinating Committees (ICCs) to (a) address injection safety in immunization services beyond the simple provision of supplies through "bundling" and (b) resolve difficulties created by the availability of different types of injection equipment from different sources at country level.

5. Communicate through an overall strategy to reach all stakeholders, from users of injections to major donors and lenders, by making use of all channels, including the Internet.

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1 "Bundling" refers to the inclusion of the costs of AD syringes and safety sharps boxes in the costs of good quality vaccines provided by donors and lenders as described in the WHO/UNICEF/UNFPA/IFRC 1999 policy statement (WHO/VAB/99.25). "Bundling" has no physical connotation and does not imply that items must be "packaged" together.
Ladies and Gentlemen, dear Colleagues,

On behalf of the Government of Egypt and of the Ministry of Health and Population, it is a pleasure for me to welcome you today in Cairo at the annual meeting of the Safe Injection Global Network (SIGN). Many of you have travelled long distances to come here today and I would like to thank you for joining us. Injection safety is extremely important to prevent further transmission of hepatitis B & C and HIV/AIDS. Hepatitis C is an important public health problem in Egypt. There is also a need to improve the overall infection control practices. The country needs a national strategy to promote injection safety. The formation of a SIGN seems like a step in the right direction to address poor injection practices worldwide. I encourage you to come up with practical recommendations that I can follow immediately with a plan of action.

His Excellency, the Minister of Health and Population of the Arab Republic of Egypt during his inaugural speech
Pilot injection safety projects, Chairperson: Zuhair Hallaj

Developing infection control in Egypt (DICE): update

Said El Oun
Ministry of Health and Population, Egypt

Prevention of bloodborne pathogen transmission is a leading priority of the Ministry of Health

Ten to fifteen percent of the population in Egypt is suspected to have hepatitis C virus (HCV) infection. Hepatitis related chronic liver disease is a leading cause of disability and death and the treatment of HCV and hepatitis B virus (HBV) infection is a burden on the country's economy. Prevention of these illnesses is a leading priority of the Ministry of Health and Population (MOHP). Infection control has been made an essential component of health-care delivery. Financial resources have also been allocated to promote good infection control practices.

Developing a comprehensive strategy to prevent transmission of bloodborne pathogens

As a first step current practices were assessed and best practices were summarized. Following that, practical approaches for improvement were designed and shared with national stakeholders. Proposed strategies include promotion of infection control practices, promotion of safe injection practices, assurance of safety in transfusion services and development of an effective advocacy plan.

Implementing the programme at the national level

National guidelines for infection control, safe injections (including use of auto-disable [AD] syringes), safe transfusion services, occupational safety and training were developed and distributed throughout the country. An accreditation process is under development that will ensure supervision and monitoring.

A national working group for advocacy

A Working Group on Infection Control with detailed terms of reference has been formed. Their main responsibilities are to provide coordination and support at the national level, to establish a forum for dialogue and information exchange and to provide technical expertise to the Ministry of Health in specific areas. The Working Group will also mobilize resources and monitor implementation.
Improving injection practices in Nepal: Results of an initial assessment

Mahesh Bhatterai
General Welfare Pratisthan, Nepal

An exploratory qualitative research approach to describe injection practices

The purpose of the study was to observe and document injection practices of private providers, in order to investigate the attitudes and knowledge regarding injections in the general public and among private practitioners. The research was conducted between March-July 2000 in seven districts of Nepal's central region. Focus group discussions, in-depth interviews, direct observations and “secret shopper” interactions were used. A total of 204 respondents with diverse age, gender and ethnic and educational backgrounds were included in the study.

Customers and providers are aware of unsafe injection practices

The majority of providers and users were aware of the problems associated with unsafe injection practices. Disposable syringes were readily available in the study area. As a result, many consumers requested disposable syringes fresh from the package if they could afford them. Providers said that “injections should not be given for common complaints” yet they prescribed many unnecessary injections, in part because injections are valued as being faster acting and more effective than oral therapies.

According to most providers and customers, health-care waste should be burned or buried because it is dangerous, but almost none of them reported doing so. Customers and providers were keen to improve injection practices and had ideas about how to achieve this, but unsafe handling of injection equipment and other sharps is common. This gap between what providers and consumers said that they should do and what they actually do represents a huge behavioural challenge.

Practical recommendation, including additional research needs

Further research in certain areas is required, including an assessment of public and private sector practices and municipal health-care waste management. The quality and safety of disposable syringes available in the market should also be assessed, as recycling of used, dirty equipment may occur. Policy initiatives, infrastructure development and provider and consumer behaviour change strategies need to be considered to decrease the spread of bloodborne pathogens in Nepal.
Action plan for SIGN Pakistan

Arshad Altaf
The Aga Khan University, Pakistan

Burden of disease associated with infections with bloodborne pathogens in Pakistan

Pakistan has a high prevalence of hepatitis B & C virus infections. Studies suggest that the prevalence of hepatitis C virus infections reaches 60% among patients presenting with hepatocellular carcinoma, 51% among thalassemia patients, 46% among patients with chronic liver disease, 18% among patients with cirrhosis and 20% among commercial blood donors. Pakistan has one of the highest injection frequencies in the world, along with Ecuador and countries of the former Soviet Union. Each person in Pakistan receives an average of 4.5 injections in a year, with 49% of outpatient visits leading to an injection.

Creation of the SIGN Pakistan alliance

The department of Community Health Sciences of The Aga Khan University collaborated with the WHO SIGN secretariat to organize a first national symposium on Safe Injection and Blood Practices in Pakistan on 15 February 2000. At the end of the symposium a Safe Injection working group was formed which was later named "SIGN Pakistan". The office of Sindh AIDS Control Programme was designated as the secretariat. Since its formation, the SIGN Pakistan working group has been actively promoting injection safety in the country. SIGN Pakistan has also identified national and international stakeholders who could participate in a national safe and appropriate use of injections initiative.

A workshop to train Pakistani researchers in qualitative methods

From 17-23 September 2000 SIGN Pakistan organized a workshop to train a group of Pakistani health professionals in the use of focus group methodology and to field test the working draft of the WHO standardized tool to identify the determinants of poor and good injection practices. This field testing also yielded preliminary data on the determinants of injection use in Karachi. Guidelines were developed for focus group discussions and in-depth interviews with different target groups.

An action plan for the SIGN Pakistan alliance

SIGN Pakistan intends to strengthen its alliance at the national level and to promote injection safety as a national policy issue. A qualitative study of the determinants of injection practices has recently been completed and further studies are planned for the future. The SIGN Pakistan alliance group intends to involve physicians, patients, population, the press and most importantly the government to raise awareness about this important public health problem. A moderated electronic mail (signpak@mailists.com) forum allows information exchange between members of this national alliance.
The WHO/BBC partnership for injection safety in Tanzania

Susan Mackay
BBC World Service Trust, United Kingdom

Working with the media to promote development and to build media capacity in developing countries

The BBC World Service Trust is a non-profit charitable trust operating within the British Broadcasting Corporation (BBC). The Trust uses a partnership approach to work with Ministries of Health and local media in developing countries. This approach promotes local ownership of a campaign, guarantees cultural sensitivity, transfers skills to the local media and helps ensure sustainability through continued momentum even after the initial campaign is over. Such partnership approaches helped prevention and treatment of trachoma in Tanzania, reduced stigma associated with leprosy in India and increased rates of compliance to leprosy treatment in Nepal.

A study documenting unsafe injection practices in Tanzania

In Tanzania, 47% of all immunization injections observed were found to be unsafe during a study conducted by the department of Vaccines and Biologicals of WHO. There was a lack of safe disposal procedures observed in 84% of facilities. Sterilizer spare parts were missing and safety boxes for the collection of sharps were unavailable. Recapping of needles and needlestick injuries were common.

Effective use of print and electronic media

Using the partnership approach, a number of communication tools were developed during a first phase that aimed at improving the safety of injections. This included the production of eye-catching leaflets, entertaining magazines and colour posters that were distributed to health-care workers involved in preventive and curative practices. In a planned second phase, that will be launched when injection safety has been achieved in immunization services, radio and TV will be used to promote community participation in immunization services and to increase vaccination coverage.
How can we get pilot projects off the ground more effectively?

Group discussion

The initiatives reported during this session are encouraging. Identification of high risk areas in public and private health-care facilities is the first and foremost step to plan pilot projects. Epidemiological research is the next step to estimate the breadth of poor injection practices and associated infections. Advocacy seminars have been found to be useful in some countries to prepare the way for injection safety activities. Identification of stakeholders is a key step to initiate such projects. These stakeholders should assess the occurrence of poor injection practices in their setting. As governments do not always have the resources to initiate such activities, other stakeholders can play a key role, including academic institutions and non-governmental organizations (NGOs). Good coordination between the public and private sectors is necessary to ensure that initiatives are effective. Formation of countrywide working groups may also be helpful to instigate injection safety activities. Potential funders of such activities should be identified to enable projects to get under way.
New injection technologies, Chairperson: Boi-Betty Betts

What norms and standards for AD syringes?

Gerald Verollet
World Health Organization, Switzerland

Global perspective of a good AD syringe

A good AD syringe should be manufactured according to international standards and can only be used once. It should be safe and easy to dispose of.

International norms and standards are needed for AD syringes

There are no international norms and standards for AD syringes apart from the WHO specifications for EPI injection equipment, which are in fact a requirement for their purchase. There is an international, national and regional need to formulate norms and standards for AD syringes to guarantee effectiveness and ensure quality.

A partnership approach to the development of international norms and standards

To develop international norms and standards, several stakeholders will have to agree on a principle. These potential stakeholders include manufacturers, users, national standard bodies, specialists and WHO. Syringe manufacturers will have to ensure that the syringe meets and/or exceeds standards of concept, design, packaging and labelling. National regulatory authorities will need to formulate national regulations based upon these standards. Periodic review of policies and regulations will be necessary. More importantly, users should be qualified and trained.

Communication is needed between stakeholders for the implementation of norms and standards

Communication between different stakeholders is necessary to increase the effectiveness of norms and standards. National regulatory authorities should communicate with manufacturers, users, the International Standard Organization (ISO), the Global Harmonization Task Force (GHTF) and WHO. Maintaining a specific international standard could also become a SIGN (Specific, International, Guarantee, Norms & Standards) objective that would facilitate a broader use of AD syringes throughout the world.
Introduction of Auto-disable (AD) syringes

Mary Catlin
Program for Appropriate Technology in Health, USA.

Auto-disable (AD) syringes for curative applications

AD syringes were used for curative purposes in a general hospital in China. Some initial problems were encountered but overall feedback was good.

Lessons learned

Provision of a complete range of sizes combined with initial instruction and practice were essential. Specific to the design used in China, the breakpoint needed to be strengthened to withstand higher forces. The design must allow for vein location, drug mixing, use of diluents, aspiration and blood witnessing.

Price and design

Price was the critical issue and it has to be kept low so that everyone can afford it. Blood sampling required the plunger to be fully depressed in most cases. This meant further modifications in design.

SIGN role to promote use of AD syringes for curative application

The present designs can be used in many applications in addition to the administration of vaccines. However, there is currently no perfect solution for the price. SIGN associates need to promote the use and procurement of AD syringes for a broad range of applications and market forces will determine choice and cost.

Metal clip in an AD syringe
Facilitating appropriate use of AD syringes

Mary Catlin
Program for Appropriate Technology in Health, USA.

AD syringes are part of a system

The use of AD syringes has to be supervised. The system, the user and the product need to be monitored. UNICEF should track what they ship and programmes should track what they receive, including brand type, fixed or detachable needle, length and gauge of the needle and dose lines. It would make sense to save samples for reference.

A training manual for the introduction of AD syringes

The Program for Appropriate Technology in Health (PATH) and its partners have prepared a training manual for the introduction of AD syringes. This manual includes a one page set of instructions for the four types of AD syringes available on the market. It also has background information for trainers and supervisors and sample lessons. English hard copies and PDF copies are available. For further information, or to discuss translation, contact info@path.org or log on to PATH's Internet site at www.path.org.

Dose accuracy and other unexpected consequences of use of AD syringes

There was a surprising variability in the doses that were given by the nurses, which indicates a need for retraining and supervision. The old BCG syringe has both 0.05 and 0.1ml dose lines while the new AD syringe has only 0.05ml. It will be important to determine how people are going to adapt to the new equipment. Preventing reuse will also depend upon careful stock management.

Preparing for change

It is important to anticipate and correct unforeseen problems that may arise with the introduction of such new technologies. Similarly, close monitoring of practice, including training and supervision can help solve numerous problems. One suggestion is that WHO prepare a statistically sound framework for the evaluation of AD syringes in the field.
What role for safer injection devices?

The introduction of new technologies, including AD syringes for both immunization and therapeutic purposes can play a significant role in the reduction of poor injection practices. The introduction of such devices in many parts of the world will require sound planning and effective communication between multiple partners to ensure a trouble-free process. Initially, health-care providers may experience difficulties in adopting such devices in their system. Training of workers as well as the provision of manuals in regional languages will be essential to enable the appropriate use of new injection devices. SIGN participants agreed that these devices should be low-cost and that a steady, uninterrupted supply must be ensured. In some countries, even AD syringes can be reused after some manipulation. Such reuse of AD syringes can be prevented if (1) patients and health-care workers are made aware of the risks associated with unsafe injection practices, (2) supplies are ensured without interruption and (3) used injection equipment is disposed of appropriately after use.
Rational use of injections within national drug policies

Kathy Holloway
World Health Organization, Switzerland

Why a national drug policy?

A national drug policy expresses the goals and objectives of a government for the pharmaceutical sector and identifies the main strategies for achieving them. The goal of a national drug policy is to set objectives, identify priorities for action and gain government commitment for its implementation. Every country needs a national drug policy in order to ensure that the population has equitable access to essential drugs and that these drugs are used in an appropriate and cost-effective way. Drugs account for between 20-40% of health budgets, with antibiotics and injections amongst the most expensive items.

A comparative analysis of national drug policies

A comparative analysis of national drug policies in 12 countries showed that generic policies resulted in lower cost of treatment in the public sector and that good quality assurance led to better acceptance of generic prescribing and dispensing. Other findings were that withdrawal of irrational drugs led to less irrational use, appropriate financing systems led to better prescribing, procurement through tenders led to better drug availability and that public sector training led to better prescription practices in the public sector as compared to the private sector.

Role of national drug policies to reduce poor injections

A national drug policy may ensure government’s commitment to promoting safe injection practices. A subcommittee of the national drug policy committee may form a national task force on injections that could coordinate an initial assessment of poor injection practices and put together an action plan to improve use. A national drug policy can further reduce poor injection practices by selecting appropriate injectable drugs and equipment for (1) a national essential drug list for use in the public sector and (2) market registration for use in the private sector. Other activities of a national drug policy that can reduce inappropriate injection use include ensuring appropriate training for health professionals, encouraging public education, regulation of promotional activities and eliminating perverse financial incentives that encourage overuse of injections.

Components of national drug policy

An important component of a national drug policy that may impact on injection use is the legislation and regulations regarding the regulatory authority, drug registration and licensing of drugs, pharmaceutical quality assurance, post-marketing surveillance and regulation of prescribing and distribution. Other important components include (1) drug selection policies, (2) consistent policies to promote more rational drug use by providers and consumers and (3) a human resource development plan.
No guidelines were available on safe injection practices

There were no consolidated guidelines available to describe what safe injection practices should be. The reference definition of a “safe injection” that refers to not harming the patient, the provider and the community does not translate into a list of critical steps. Thus, there was a need to develop a document that could provide guidance on the best practices to prevent injection-associated infections. These best practices are measures that have been determined through scientific evidence or expert consensus to most effectively protect patients, providers and communities.

Formation of a working group to develop best injection safety practices

A working group of experts in different fields with diverse backgrounds was formed and assigned the task to come up with a “Best Practices” document which may be adopted by programmes in different countries. The group included programme specialists, nursing generalists and behaviour and systems specialists.

Process for development of "Best Practices"

First the reference “safe injection” definition was broken down into critical steps. Second, research questions for each step were identified. Third, a literature review of approximately 150 articles was conducted to provide an answer to each research question. Fourth, a grading system was developed to document the level of evidence. Fifth, a draft best practices document was formulated. Four scientifically supported practice areas were addressed and five other practice issues were also discussed where science was inconclusive and required clarification. Sixth, the document was discussed and revised in October 2000 during a two-day meeting of consultants. Seventh, the revised draft was distributed for public comments until February 2001.

Plans for review

The document was distributed at the annual SIGN meeting in Cairo in October 2000 and further discussed through use of the SIGN Internet e-mail discussion forum.
Advocacy for injection safety

Guy Scandlen
The Tamthai Fund, Thailand

Definition of advocacy

Advocacy is a continuous and adaptive process of gathering, organizing and formulating information into argument, to be communicated through various interpersonal and media channels. This is done with a view to raising resources or gaining political and social leadership acceptance and commitment for a development programme, thereby preparing a society for acceptance. Suggested change in terminology is to use the phrase “participant groups” instead of “target groups.”

"Document X": The documentation of the societal dimensions of unsafe injection practices

A document is needed to demonstrate the negative impact on society of not preventing hepatitis B and C. For the time being we will call this “Document X”. It will be the central instrument to be used in advocacy activities. Document X should stress interrelationships and emphasize that everything is about something else. In other words, unsafe injections is not just about unsafe injections, but is about the first do no harm principle, about the right to be informed about potential side effects of treatments, about saving health-care resources wasted in unnecessary injections and about hepatitis B and hepatitis C prevention. It should stress the personal benefits of implementing programmes promoting the safety of injections. It has to be a consolidated document with mission statements.

Mass media as a powerful advocacy tool in developing countries
How can we promote injection safety policies?

Raising the awareness of policy planners is the first step towards promoting injection safety policies. Results of research that identifies the hazards of poor injection practices and their determinants should be communicated in meetings and seminars to officials of the Ministry of Health (MOH). Injection safety groups should continue to keep themselves in communication with the right persons in health departments. Information about SIGN and its objectives will also help in getting attention of policy planners, if effectively communicated.
Injection safety in donor- or lender-funded services, Chairperson: Paul Fife

Documenting progress in immunization injection safety

Philippe Dudos
World Health Organization, Switzerland

Placing immunization safety at the heart of immunization services

The "Immunization Safety Priority Project" (ISPP) is a growing partnership to support countries in establishing a comprehensive system to ensure the safety of all immunizations provided by national services. It covers four areas: 1) research and development of safer and simpler delivery technologies, 2) access to safe vaccine delivery technologies and their disposal, 3) vaccine safety up through the point of use and 4) risks identification and management.

Targeted milestones

By the end of 2000, all syringes purchased by donor-partners for immunization purpose should be either AD or sterilizable. Cost effectiveness studies on alternative injection technologies should be complete. By the end of 2001 all syringes purchased for immunization and funded by national budgets, procured directly through UNICEF, should be AD or sterilizable. At least 20 of the poorest countries should use safer or safer injection devices and implement safer and more effective immunization practices. By the end of 2003, AD syringes should be used globally. Indicators will include the proportion of countries with national safe injection plans, including a sharps waste management component detailed down to district level.

Injection safety assessment requires a standardized and representative method

Assessment of injection safety practices requires a standard and representative method to allow comparison across countries as well as measurement of their progress. The standardized tool should be simple, structured and flexible to enable it to be used at different levels.

Development of "Tool C" to assess injection safety in health-care facilities

A joint standard assessment tool for injection safety (both immunization-related and for general curative care) was developed in collaboration between SIGN, BASICS and WHO’s Department of Vaccines and Biologicals and the Statistical Department of Ohio State University. Its concept was discussed during a workshop held at BASICS headquarters (Washington, DC, USA). This tool underwent extensive consultations and was successfully pilot tested in a number of countries. The purpose of this tool is to provide a standardized and representative assessment of injection safety practices that will allow for measurement of progress and comparison across countries/jurisdictions. The entire assessment is to take place over a three-week period. The sampling strategy involves a two-stage cluster sampling of a total of 80 health facilities with random selection of 8 geographic regions to serve as clusters and within each, 10 health-care facilities. Data collection includes a combination of (1) structured observations of equipment and supplies, (2) observation of injections and (3) interviews with health-care workers.
The assessment tool is geared at assessing all three critical steps of injection safety i.e. (1) the reuse of syringes or needles between patients without sterilization (risk of infection for the recipient), (2) inappropriate waste collection (risk of infection for the health-care worker) and (3) inappropriate waste disposal (risk of infection for the community).

Assessments should be seen as a catalyst for change and should be linked to advocacy activities and implementation of a plan of action.
Promoting immunization injection safety through GAVI

Scott Wittet
Gates Children’s Vaccine Program, USA

Bill and Melinda Gates’ Children’s Vaccine Program (CVP) work in safe injection

One of the missions of Gates’ CVP is to provide better immunization solutions for a changing world. Gates’ CVP has supported the WHO injection safety initiative with a US$278,000 grant for the development of a toolbox for communication and behaviour change in the area of injection safety. Other programmes receiving support from CVP included a study of injection perceptions and practices in Nepal, a safe injection action planner and "Uniject" for hepatitis B vaccination in Indonesia.

Global Alliance for Vaccines and Immunization (GAVI)

The Global Alliance for Vaccines and Immunization (GAVI) was established in 1999 to coordinate the immunization strengthening efforts of key agencies including WHO, UNICEF, the World Bank and the Gates’ CVP at PATH. GAVI aims at getting new and underutilized vaccines to the children who need them, in a safer manner.

Injection safety in GAVI and the Fund

WHO and UNICEF are key partners; therefore GAVI is guided by their joint policies regarding injection safety and use of AD syringes. The GAVI partners also encourage the use of combination vaccines to minimize the total number of immunization injections. However, shortages in combination vaccine do not allow the supply to all countries that need it. Finally, GAVI partners have declared that injection safety is one of the most important quality indicators for immunization services.

GAVI and the Global Fund to bundle AD syringes and disposal equipment with vaccines

GAVI and the Global Fund will provide AD syringes and disposal equipment with all vaccines, except in cases where countries have a policy to use sterilizable equipment. The GAVI partners are working to define precise injection safety monitoring and assessment indicators. PATH is working on new injection and sharps management solutions, including Uniject, needle-free reconstitution of vaccine and new “defanging” technologies.
Injection safety in the EMRO measles immunization plan

Taky Gaffar
World Health Organization, Egypt

Measles control strategies in the EMRO region

The incidence of measles is still high in the EMRO region and measles control strategies have been planned. There is a need to raise routine immunization coverage as well as establishing and strengthening measles surveillance. Nationwide catch-up and follow-up campaigns will be increased.

Injection safety in measles campaigns

Injection safety is one of the main components of national EPI plans. Basic injection safety principles include training of health-care workers in the use of disposable/AD syringes, proper collection of used syringes and proper disposal of sharps waste. There is also a plan to develop a regional toolbox including curriculum and Information Education Communication (IEC) material for training of health-care workers on injection safety.

Documenting injection safety in all EMRO countries

There will be revised national plans on safety of routine and supplementary immunizations based on injection safety surveys. All countries will document satisfactory injection safety in routine and supplementary immunization services.
Injection safety in donor- or lender-funded services making use of injections

Group discussion

The participants of the SIGN meeting suggested that research and development should continue to identify simpler delivery systems. Access to safe vaccine technologies and health-care waste management is crucial to ensure sustainability of programmes across the world. Cost effectiveness studies on alternative injection technologies are required. WHO, UNICEF and GAVI should ensure the steady supply of safe syringes. It was also suggested that monitoring and evaluation of the supply system is essential to identify loopholes and improve the overall structure in countries.
Working with other networks, Chairperson: Nick Crofts

The International Network for Rational Use of Drugs (INRUD)

Sri Suryawati
International Network for Rational Use of Drugs, Indonesia

The International Network for Rational Use of Drugs (INRUD) framework

INRUD is a cooperative international venture that addresses the problem of inappropriate use of drugs in an innovative way, using an interdisciplinary approach. With the help of the network, it is hoped that effective and realistic policy and programme options can be identified. The approach starts from formative studies that define the problem and identify motivating factors. After this a controlled intervention study is chosen from a list of possible options. Following a successful study, cost effective interventions are implemented on a large scale. Ineffective interventions are abandoned.

Unnecessary injections in Indonesia: An intervention study supported by INRUD

Injections were overused in health-care settings in Indonesia. In 1987, among persons attending outpatient clinics, 44% of under five and 74% of five years of age and older received at least one injection. Ninety percent of these injections were unnecessary.

Interactional Group Discussions (IGD) to reduce inappropriate injection use in Indonesia

Formative studies indicate that patients attribute injection overuse to the will of prescribers, while prescribers associate it with patient demand. This discrepancy suggests cognitive dissonance. An intervention study facilitated by a behavioural scientist and a pharmacologist focused on the discrepancy between patient and prescriber perspectives during 90-120 minutes interactional group discussions. Results showed that IGD-based interventions were successful in obtaining a reduction in injection use in health-care settings. Moreover, this reduction was sustained for at least two years.

What INRUD offers

INRUD offers sharing of knowledge and experience on research methodology and effective strategies to improve problems associated with use of essential drugs. Courses on promoting rational drug use have been attended by approximately 600 participants from 41 different countries. The organization also publishes a newsletter and provides consultancy on different projects.
Appropriate health-care waste management

Health-care waste includes all the waste that is produced by health-care establishments, research facilities and laboratories. Ten to 25% of health-care waste is hazardous and carries a number of health risks. The Working Group recommends a strategy for the safe disposal of health-care waste based on the “polluter pays principle” (i.e. all waste producers are responsible for safely disposing of their wastes). The proposed strategy is to achieve safety and sustainability by improving the access to information, developing tools to guide the choices in building a comprehensive waste management system and support networks and pilot projects. WHO has already developed several products and tools that provide information about health-care waste management.

National policy for safe health-care waste management

A national policy for safe health-care waste management should have a regulatory framework, implementation guidelines and a designated responsible authority. Essential elements include the development of a comprehensive system for gradual implementation, awareness and training about risk and practices and the selection of safe and sustainable options.

Interactive database

The database contains information on a number of technical issues such as segregation, transport, treatment and disposal of health-care waste. It also has links to resource material and country information. The database compiles information on technologies and practices that have been implemented and tested in developing countries. It also assists in choices according to a number of input criteria.

Other products

A number of other products are being prepared in the framework of the strategy, including a Rapid Assessment Tool (RAT), National Action Plans (NAP), a guide on disposal of blood and a decision making guide for primary health-care centres. All products and additional information are available on the website www.healthcarewaste.org.

The hydroclave: A waste management option adapted to urban settings
The Global Research Network on Injection Drug Use

Suresh Kumar
UNICEF, India

The Global Research Network

The Global Research Network (GRN) is an international network of scientists and practitioners from governments, non-governmental organizations, research institutes and universities that began exchanging scientific information in June 1998. The goals of the GRN include:

• Promoting research into the prevention of further spread of HIV and other bloodborne pathogens, such as hepatitis C virus, among injection and non-injection drug using populations globally;

• Ensuring that research findings are disseminated to those who need them so that they are applied in practice.

GRN's sponsoring agencies

Agencies sponsoring GRN include the U.S. Department of Health and Human Services and its Office of AIDS Research; the U.S. National Institute on Drug Abuse (NIDA); the World Health Organization (WHO); the Canadian Department of Health; the Fogarty Institute; and the Medical Research Council of South Africa.

Programmes supported by the GRN

The Network to date has been involved in scientific information sharing, but is developing joint research programmes with NIDA and WHO. Currently the major research activities under development involve global overviews of illicit drug use, HIV among drug users and responses to the threat of HIV transmission among injecting drug users. Network members are involved in service provision, offering community-based outreach programmes, syringe exchange programmes, unrestricted access to syringes or pharmacies, bleach distribution programmes and programmes to increase the availability of condoms. The network also supports HIV counselling and testing, HIV drug therapies, hepatitis B vaccination and hepatitis C prevention.
Networking with other networks will help in achieving the injection safety goal. Networking will also strengthen specific areas, provide assistance in different parts of the world whenever needed by each party and assist in identifying realistic policy and programme options for different injection safety programmes currently in the planning or implementation process.
The objective of the assessment toolbox is to gain a better understanding of the key issues to inform the design of effective and efficient interventions. Data on injection practices, their determinants and their consequences will create the opportunity for effective dialogue between the key stakeholders in injection safety. The components of the toolbox include (a) qualitative research tools to identify the determinants of poor injection practices; (b) quantitative tools to estimate the frequency of injections and to identify injection providers; (c) quantitative tools to estimate the proportion of healthcare facilities engaging in safe injection practices; and (d) epidemiological tools to assess the association between injections and infections. A "Rapid assessment and response guide" provides an opportunity to use a mix of the assessment approaches. It also emphasizes the need to engage a local constituency to take action based on assessment results.

Experience acquired through pilot testing of the tools

All the components of the toolbox have been or are being tested somewhere in the world. "Tool A" to identify the determinants of poor injection practices will be pilot tested in Pakistan. "Tool B" to estimate injection frequency will be pilot tested in Uganda. "Tool C" to estimate the proportion of safe injection practices was pilot tested in Burkina Faso and in Niger. Tool D is being pilot tested in Pakistan. Finally, the "Rapid assessment and response guide" was pilot tested in Albania before a mass measles campaign.

Standards are not created: they evolve

The assessment toolbox was designed as a flexible draft for adaptation through extensive pilot testing. Thus, throughout the coming years, adaptations will be made to ensure that the tools (1) provide reliable information and (2) trigger appropriate action. A final version of the assessment package should be made available to all SIGN participants in 2002.
Pilot testing the injection safety assessment tool in Burkina Faso

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An injection safety assessment was needed in Burkina Faso

Unsafe delivery and overuse of injections are responsible for numerous transmissions of hepatitis B virus, hepatitis C virus and HIV in the developing world. Following a report suggesting that in 1995-96 only 11% of injections in rural health centres in Burkina Faso were performed with sterile equipment, in 1996 communities were given the responsibility of supplying injection equipment. Stocks of new disposable injection equipment were then established in each community to be sold to patients when needed. The aim of the present study was to estimate the frequency of unsafe injection practices in Burkina Faso.

Using the new WHO injection safety assessment tool to evaluate injection practices in the country

A two-stage cluster sample methodology was used to select eight clusters with probability proportional to population size. In each cluster, 10 health centres were randomly selected. Information was collected in June 2000 through (1) structured observation of injection equipment supplies and injection practices and (2) staff interviews. Confidence intervals for proportions were calculated taking into account design effect (DE) using Epi-Info software.

Dramatic improvement of injection practices between 1995 and 2000

A total of 116 injections were observed in 52 of the 80 centres visited. In 50 centres (96% CI [85-99], DE=1.03) injections were given with a new disposable syringe and in 51 (98% CI [85-99], DE=1.03) with a new disposable needle. All centres had a community stock to provide new disposable syringes and needles. In 29 centres (56% [36-74], DE=1.98), health staff recapped needles using two hands. In 71 centres of the 80 centres visited, staff remembered suffering accidental needle-stick injuries in the last 12 months. Used needles were discarded in open containers in 66 centres (83% [55-96], DE=4.56) and found in the environment of 46 centres (57% [32-80], DE=4.66).

Additional efforts needed to collect and dispose of sharps appropriately

The increased availability of injection equipment in communities may have contributed to the increase in the use of sterile injection equipment observed between 1995 and 2000 in Burkina Faso. However, unsafe sharps waste collection and disposal persist, placing health-care workers and patients at risk of infection. To achieve safe injection practices in Burkina Faso, recommendations have been made for policy development in health-care waste management and for increased availability of sharps containers.
Burden of disease associated with unsafe injection practices

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Burden of disease attributed to unsafe medical injections: a 1999 mass action model

Thousands of millions of medical injections are administered every year in developing countries and many of them are unsafe. The transmission of bloodborne pathogens through this route is thought to be a major public health problem. In 1999 Adam Kane and colleagues created a model that consisted of a generalized linear equation to calculate the probability that an average individual in a particular geographical region will acquire a hepatitis B virus (HBV), hepatitis C virus (HCV) or human immunodeficiency virus (HIV) infection each year. This probability was multiplied by population size for each world region to estimate the number of HBV, HCV and HIV infections that may occur from unsafe injections. The results of the model suggest that approximately 8-16 million HBV, 2.3-4.7 million HCV and 80,000-160,000 HIV infections may result annually from unsafe injections.

A 2000 update of the 1999 model

In 2000, this model was updated so that it could be included in the 2000 update of WHO’s Global Burden of Disease (GBD) study. To this effect, the model was adapted so that it could fit the “Comparative Risk Assessment” methodology. The year 2000 figures were estimated by calculating exposure prevalence and relative risks for the 14 GBD regions for both sexes and 8 age groups. Input parameters for exposure prevalence included the annual number of injections per capita, the proportion of injections administered with equipment reused in the absence of sterilization (proportion of reuse) and the prevalence of infection with HBV, HCV and HIV. Input parameters for relative risks included the annual number of injections per capita, the proportion of reuse, the pathogen-specific percutaneous transmission potential and the epidemiological profiles of HBV, HCV and HIV infections, including prevalence of infection, prevalence of immunity and incidence. The updated 2000 provisional model suggests that up to 32 million HBV, 7 million HCV and 98,000 HIV infections may be associated with unsafe medical injections. While the overall estimates of the 2000 update do not differ much from the 1999 version, the regional analysis is markedly different. Injection overuse and unsafe practices are most common in the SEARO D and EMRO D regions that include most of the Middle East crescent and South Asia. In these regions, the proportion of new HIV infections attributable to unsafe injections is high, exceeding 5% of all HIV infections.

Expected benefit: Towards evidence-based advocacy

Inclusion of the burden of disease attributed to unsafe medical injections in WHO’s Global Burden of Disease study provides a number of benefits. First, we are now confident that in- and outputs of the model are consistent with other WHO estimates and reports. Second, results will be included in the publication of the Global Burden of Disease study (the special volume on major risk factors), which will be included in the World Health Report in 2002. Finally, presentation of burden of disease estimates that belong to WHO’s Global Burden of Disease study provides unique opportunities for evidence-based advocacy.
Conclusions

The annual Safe Injection Global Network (SIGN) meeting held on 23-24 October 2000 in Cairo, Egypt, was an opportunity to review progress and challenges in the efforts of the coalition to achieve safe and appropriate use of injections worldwide.

Progress

Participants of the coalition have made a number of significant achievements in the 12 months that have elapsed since the launch of the network in October 1999. First, two countries, Pakistan and Egypt, constituted national multidisciplinary working groups to achieve safe and appropriate use of injections. Second, safer injection technologies, including auto-disable (AD) syringes, are increasingly in use. A specific manual has been developed to facilitate their introduction in developing countries and manufacturers of safer injection technologies have decided to form an association to facilitate exchanges with all partners. Third, key elements of national safe and appropriate use of injection policies have been outlined. A new assessment and evaluation tool is being pilot tested in six countries, best practices guidelines are available as a draft for public comments and a toolbox for behaviour change is in preparation. Fourth, WHO’s Immunization Safety Priority Project (ISPP) has developed critical indicators which will drive progress in immunization services injection safety.

Challenges

In the future, SIGN participants agree to work more in the five following areas:

1. Identifying mechanisms to facilitate integration of their experience acquired through pilot and demonstration projects so that national policies to reduce unnecessary injections and achieve safe practices can be formulated and funded.

2. Encouraging rigorous evaluation of safer injection equipment and waste management options and dissemination of evaluation results to manufacturers, WHO, donors and purchasers to facilitate research and development, create international norms and standards and introduce newer technologies on a large scale.

3. Promoting a holistic approach to safe and appropriate use of injections that goes beyond the simple provision of supplies to also include behaviour change activities and sharps waste management policies that are budgeted and financed.

4. Providing technical assistance to WHO, donors, lenders, the Global Alliance for Vaccine and Immunization (GAVI) and country Inter-agency Coordinating Committees (ICCs) to (a) address injection safety in immunization services beyond the simple provision of supplies through “bundling” and (b) resolve difficulties created by the availability of different types of injection equipment from different sources at country level.

5. Communicate through an overall strategy to reach all stakeholders, from users of injections to major donors and lenders, by making use of all channels, including the Internet.
Appendices

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Appendix 1: List of participants

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Appendix 2: Programme of work

Monday, Oct. 23: SIGN at year one: What have we achieved?

Morning: Key initiatives from the strategic framework (plenary sessions)

8:00-8:15 Opening address Ministry of Health, Egypt

Pilot injection safety projects, Chairperson: Zuhair Hallaj

8:30-8:35 Key elements of injection safety strategies Chairperson
8:35-8:50 “Developing Injection Control in Egypt” (DICE) Said Aoun
8:50-9:05 Improving injection practices in Nepal: Results on an initial assessment Mahesh Bhattarei
9:05-9:20 Action plan for the SIGN Pakistan working group Arshad Altaf
9:20-9:35 The WHO/ BBC partnership for injection safety Susan Mackay
9:35-9:45 How can we get pilot projects off the ground more effectively? Group discussion

New injection technologies, Chairperson: Boi-Betty Betts

9:45-9:50 What are AD syringes? Chairperson
9:50-10:05 What norms and standards for AD syringes? Gerald Verollet
10:05-10:20 Introducing curative AD syringes Mary Catlin
10:20-10:35 Facilitating appropriate use of AD syringes Mary Catlin
10:35-10:45 What role for safer injection devices? Group discussion
10:45-11:15 Coffee break

Policy and plans for safe and appropriate use of injections, Chairperson: Sri Suryawati

11:15-11:20 Safe and appropriate use of injection policies Chairperson
11:20-11:35 Rational use of injections within national drug policies Kathy Holloway
11:35-11:50: Best infection control practices for injections: Report of a working group Catherine MacCaulay
11:50-12:05 Advocacy for injection safety Guy Scandlen
12:05-12:15 How can we promote injection safety policies? Group discussion

Injection safety in immunization and other donor- or lender-funded services, Chairperson: Paul Fife

12:15-12:20 “Bundling”: Historical perspective Chairperson
12:20-12:35 Documenting progress in immunization injection safety Philippe Dudos
12:35-12:50 Promoting immunization injection safety through GAVI Scott Wittet
12:50-13:05 Injection safety in the EMRO measles immunization plan Taky Gaffar
13:05-13:15 Injection safety in donor- or lender-funded services making use of injections Group discussion
13:30-14:30 Lunch

Afternoon: Where are we in our “to do” list, the SIGN strategic framework (Breakout sessions)

Four parallel sessions
14:30-16:00 Breakout sessions: what have we achieved?
Group 1 Pilot projects Rebecca Fields
Group 3 Policies and plans Kathy Holloway
Group 3 Bundling Mariana Bukli
Group 4 Industry Gerald Verollet / Gordon Larsen
16:00-16:30 Coffee break
16:30-17:30 Breakout sessions: What is missing in our “to do” list?
Meeting of a group of rapporteurs to prepare feedback to the group
17:30-18:30
Tuesday, Oct. 24: SIGN in the next year: Where do we need to go from here?

Morning

Working with other networks, Chairperson: Nick Crofts

8:30-8:35: Introduction
The International Network for Rational Use of Drugs (INRUD) Group
Chairperson: Sri Suryawati

8:35-8:50: The Health-care Waste Working Group
Group: Sri Suryawati

8:50-9:05: The Global Research Network on Injection Drug use
Chairperson: Annette Pruess

9:05-9:20: Group discussion: Networking with other networks
Chairperson: Suresh Kumar

9:20-9:30: Reporting back from the breakout sessions, Chairperson: Viorica Ghiorghiu

9:30-10:30: Group 1, 2, 3, and 4 Rapporteurs
10:30-11:00: Coffee break

Group discussion on the breakout sessions reports, Chairperson: Arshad Altaf

11:00-12:00: What has not been done on our “to do” list?
12:00-13:00: Does our “to do” list need any change?
13:00-14:00: Lunch

Afternoon

Monitoring and evaluation, Chairperson: Susan Goldstein

14:00-14:05: Introduction
14:05-14:20: The SIGN assessment and evaluation toolbox
The SIGN assessment and evaluation toolbox
Rebecca Fields

14:20-14:35: Pilot testing the tool to assess injection safety in Burkina Faso
Pilot testing the tool to assess injection safety in Burkina Faso
Jean F. Aguilera

14:35-14:50: Burden of disease associated with unsafe injection practices
Burden of disease associated with unsafe injection practices
Anja Hauri

14:50-15:00: Group discussion

The SIGN Terms of Association: 2000 update, Chairperson: Mary Catlin

15:00-15:10: Suggested changes
Suggested changes
Yvan Hutin

15:10-16:00: Group discussion
Group discussion

16:00-16:30: Coffee break

Closure: Update on the strategic framework, Chairperson: Denis Maire

16:30-17:30: Presentation from rapporteurs
Presentation from rapporteurs
Zuhair Hallaj

17:30-18:00: Group discussion
Group discussion

18:00-18:15: Closure and take home messages
Closure and take home messages
Zuhair Hallaj

19:00-20:00: Post meeting social event to discuss the “Toolbox for behaviour change” project

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Appendix 3: SIGN terms of reference (2000 update)

The Safe Injection Global Network (SIGN)

A safe injection does not harm the recipient, does not expose the provider to any avoidable risks and does not result in waste that is dangerous for the community.

Unsafe injection practices are increasingly recognized as a major source of infection with bloodborne pathogens. While it is the responsibility of all health-care workers, their employers, the public and national governments to ensure safe and appropriate use of injections, the prevention of bloodborne pathogen transmission and other adverse events associated with injections will require improved collaboration between organizations and individuals sharing a common interest in attaining this goal.

To achieve this collaboration, the “Safe Injection Global Network” (SIGN) has been established. SIGN is a voluntary coalition of stakeholders aiming to achieve safe and appropriate use of injections throughout the world. The Blood Safety and Clinical Technology (BCT) department of the World Health Organization (WHO) provides the secretariat for the network.

1. Terms of Reference for the Safe Injection Global Network (SIGN) Coalition

1.1. Mission statement

The mission of SIGN is to achieve safe and appropriate use of injections worldwide by concerted action under a common strategic framework. SIGN will initially focus on those procedures that contribute most to the transmission of bloodborne pathogens.

The SIGN participants agree to collaborate in the following areas:

1. Proposing a strategic planning framework and updates for approval and adoption by each of the participant organizations and institutions;
2. Developing proposals for evaluating activities within the strategic framework;
3. Promoting the development and implementation of standards;
4. Advocating;
5. Promoting political commitment;
6. Mobilizing resources;
7. Sharing information, ideas and updates;
8. Encouraging innovative, cost-effective solutions.

1.2. SIGN structure and function

SIGN is made up of individuals, representatives of public and private organizations and national public health officials. These groups and individuals share a common interest, are active internationally and have a recognized expertise in the field of preventing bloodborne pathogen transmission and other adverse events associated with poor injection practices. The secretariat for SIGN is provided by WHO. In this regard, all activities undertaken by WHO as the secretariat of SIGN will be subject to WHO policies, rules, regulations and practices.
1.2.1. New participants

Participation in SIGN is open to all individuals, representatives of public and private organizations and to national public health officials that share a common interest, are active internationally and have a recognized expertise in the field of preventing bloodborne pathogen transmission and other adverse events associated with poor injection practices.

1.2.2. Activities conducted by SIGN participants

SIGN participants are encouraged to conduct activities that are consistent with the strategic framework under their own responsibility and according to their respective policies and principles. Fund-raising efforts of SIGN participants for their own activities will be subject to their own respective policies and principles.

1.3. Information exchange

SIGN participants intend to discuss matters of relevance to SIGN and share information through annual meetings, e-mail list servers, web sites, newsletters and working groups. In order to avoid perceived or actual conflicts of interests, WHO will ask participants before each SIGN meeting or working group to sign a declaration of interests before participation comes into effect.

1.3.1. Annual meetings

SIGN participants will meet at least annually. Meetings will focus on the development of consensus recommendations to the participating organizations in regard of the proposed strategic framework. Documentation, updates and information exchange preparatory to such meetings will be circulated by WHO as the secretariat of SIGN.

1.3.2. E-mail list server and Internet site

A moderated e-mail list server and an Internet site operated by WHO as the secretariat of SIGN will facilitate informal discussion groups and the distribution of documents.

1.3.3. Newsletter

A newsletter will be issued to disseminate information and reports regarding completed, planned, or ongoing activities of the SIGN participants.

1.3.4. Working groups

Within SIGN, working groups may be created to address specific issues as needed.

1.4. Reports

The discussions of each SIGN meeting or SIGN working group should be recorded in a report.

1.5. Consensus recommendations

Consensus recommendations contained in the reports of SIGN meetings or SIGN working groups, or developed through other SIGN processes, will be made available to SIGN participants. These recommendations will not be binding for any participating organization of SIGN. However, they may be used as the basis for guidelines or official
policy according to the mandate and internal rules of each such participating organization.

2. Terms of reference for the SIGN secretariat

2.1. Functions of the secretariat

Subject to the availability of funds for this purpose, WHO/BCT will provide the secretariat for SIGN and will support SIGN by the following functions:

- Coordinate the organization of SIGN meetings and ad hoc working groups;
- Organize a central repository of information and documents relevant to SIGN;
- Maintain a database of participants' activities which are completed, ongoing, or planned;
- Inform the network of activities, ongoing, or planned;
- Prepare and distribute draft meeting agendas, meeting reports and progress reports for adoption by the network;
- Coordinate the development and update of the proposed SIGN strategic framework;
- Coordinate participants' communication strategies;
- Create and manage an e-mail list server and a SIGN Internet site;
- Produce the SIGN newsletter;
- Arrange review of documents as requested by participants;
- Receive expressions of interest from prospective participants at: sign@who.int

2.2. Funds for the secretariat

Funds will need to be raised to support SIGN secretariat activities. Fundraising by WHO/BCT to support the work of SIGN will be undertaken in accordance with WHO's policies and principles. SIGN participants may be required to make financial contributions to support the meetings of SIGN and the work of WHO/BCT in providing the secretariat for SIGN. Acceptance by WHO of such contributions is subject to WHO's policies and principles.

The WHO BCT will administer financial contributions intended to support the work of the SIGN secretariat through an allotment entitled Safe Injection Global Network Secretariat. This allotment will be administered in accordance with WHO's financial regulations, rules and practices and will be subject to WHO's normal programme support costs.

2.3. Accountability

Annual financial reports will be provided by WHO/BCT to the SIGN participants, justifying how funds designated to support the activities of the SIGN secretariat have been used.
Appendix 4: Best practices

Best Infection Control Practices for Skin-Piercing Intradermal, Subcutaneous and Intramuscular Needle Injections

A safe injection does not harm the recipient, does not expose the provider to any avoidable risk, and does not result in any waste that is dangerous for other people.

The purpose of this document is to provide guidance on the best practices for preventing injection-associated infections. Eliminating unnecessary injections is the highest priority towards reaching this goal. These best practices are measures that have been determined through scientific evidence or expert consensus to most effectively protect patients, providers and communities.

1. Use sterile injection equipment

- Use a new, quality-controlled, sterile, disposable, syringe and needle for each injection.

- Inspect packaging for breaches in barrier integrity. Discard a needle or syringe if the package has been punctured, torn, or damaged by exposure to moisture.

2. Prevent contamination of injection equipment and medication

- Prepare each injection in a clean designated area where blood or body fluid contamination is unlikely.

- Use units of medication that are least susceptible to contamination and provider injury:
  - Use single-dose medication/diluent vials rather than multi-dose vials when possible.
  - Avoid glass ampoules that need to be filed.

- When multi-dose vials must be used:
  - Always enter a multi-dose vial with a new, sterile needle; never enter a multi-dose vial with a needle or syringe that has been used on a patient.
  - Do not leave a needle in place in a multi-dose vial stopper.

- When glass ampoules must be used, use a clean barrier (e.g., small gauze pad) to protect fingers when breaking them open.

- Inspect for and discard vials and ampoules with visible contamination or breaches of integrity (e.g., cracks, leaks).

- Use a new needle and syringe to reconstitute each vial with a sterile solution.

- Follow product-specific recommendations for reconstitution, storage, handling and discarding unused doses.

- Discard a needle that has been touched or contaminated in any other way.
3. Prevent needlestick injuries to the provider

- Avoid use of injection equipment that requires disassembly.
- Anticipate and take measures to prevent sudden patient movement during injection.
- Avoid recapping a used needle. If recapping is necessary, use a single-handed scoop technique.
- Do not bend, break, or cut needles prior to disposal.
- Dispose of used needles at the site of care in a container that is puncture- and leak-proof and that can be sealed.

4. Prevent access to used needles

- Do not overfill sharps containers. Close and seal them when three-quarters full for transport to a secure area in preparation for disposal. After closing and sealing sharps containers, do not open, empty, reuse, or sell them.
- Protect people from voluntary and accidental exposure to used injection equipment using waste management technologies that are efficient, safe and environment-friendly.

5. Other practice issues

1. Engineered technology.

- Whenever possible, use devices designed to prevent needlestick injury that have been shown to be effective for patients and providers.
- Auto-disable (A.D) syringes are increasingly available to prevent reuse of injection equipment in selected settings, including immunization services.

2. Hand hygiene.

Perform hand hygiene (i.e., wash or disinfect hands) prior to preparing injection material and providing injections. The need for hand hygiene between each injection will vary based on the setting and whether there was contact with soil, blood or body fluids.


Gloves are not routinely needed to protect the patient or health-care provider during an injection. Gloves may be indicated if local infection or other skin condition (e.g., weeping dermatitis, skin lesions, cuts) is present on the provider’s hands or if excessive bleeding is anticipated.

4. Swabbing of vial tops or ampoules with a disinfectant:

- Available scientific evidence does not support routine swabbing of vial tops.
- Use only clean and dry ampoules.
• Because inappropriate swabbing has contributed to patients’ infections, if swabbing with an antiseptic is selected for use, it should be done with a single use clean swab and the appropriate contact time maintained; it should not be conducted with a swab that is dirty, blood-stained, or stored wet.

5. Skin preparation prior to injection.

• Available scientific evidence does not support routine swabbing of the clean skin prior to giving an injection, with the exception of the injection drug use setting.

• Skin that is visibly dirty should be washed prior to the procedure.

• Because inappropriate swabbing has contributed to patients’ infections, if swabbing with an antiseptic is selected for use, it should be done with a single use clean swab and the appropriate contact time maintained; it should not be conducted with a swab that is dirty, blood-stained, or stored wet.
Executive Summary

The annual Safe Injection Global Network (SIGN) meeting held on 23-24 October 2000 in Cairo, Egypt, was an opportunity to review progress and challenges in the efforts of the coalition to achieve safe and appropriate use of injections worldwide.

Progress

Participants of the coalition have made a number of significant achievements in the 12 months that have elapsed since the launch of the network in October 1999. First, two countries, Pakistan and Egypt, constituted national multidisciplinary working groups to achieve safe and appropriate use of injections. Second, safer injection technologies, including auto-disable (AD) syringes, are increasingly in use. A specific manual has been developed to facilitate their introduction in developing countries and manufacturers of safer injection technologies have decided to form an association to facilitate exchanges with all partners. Third, key elements of national safe and appropriate use of injection policies have been outlined. A new assessment and evaluation tool is being pilot-tested in six countries, best practices guidelines are available as a draft for public comments and a toolbox for behaviour change is in preparation. Fourth, WHO's Immunization Safety Priority Project (ISPP) has developed critical indicators which will drive progress in immunization services' injection safety.

Challenges

In the future, SIGN participants agree to work more in the five following areas:

1. Identifying mechanisms to facilitate integration of their experience acquired through pilot and demonstration projects so that national policies to reduce unnecessary injections and achieve safe practices can be formulated and funded.

2. Encouraging rigorous evaluation of safer injection equipment and waste management options and dissemination of evaluation results to manufacturers, WHO, donors and purchasers to facilitate research and development, create international norms and standards and introduce newer technologies on a large scale.

3. Promoting a holistic approach to safe and appropriate use of injections that goes beyond the simple provision of supplies to also include behaviour change activities and sharps waste management policies that are budgeted and financed.

4. Providing technical assistance to WHO, donors, lenders, the Global Alliance for Vaccine and Immunization (GAVI) and country Inter-agency Coordinating Committees (ICCs) to (a) address injection safety in immunization services beyond the simple provision of supplies through "bundling" and (b) resolve difficulties created by the availability of different types of injection equipment from different sources at country level.

5. Communicate through an overall strategy to reach all stakeholders, from users of injections to major donors and lenders, by making use of all channels, including the Internet.