

Injection **SAFETY**



First do no harm



**His life
and her trust
are in our
hands**

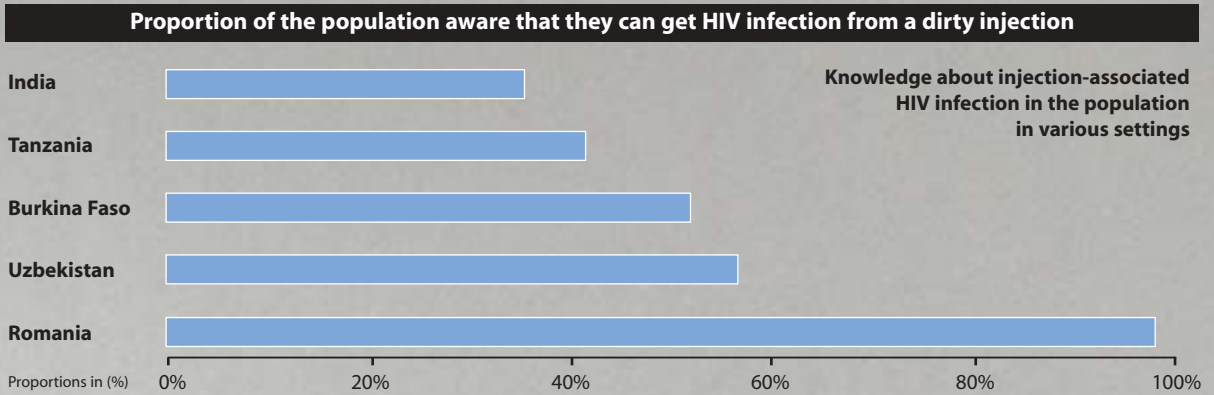
FIRST DO NO HARM

*"I will follow that system of regimen
which according to my ability and judgement I consider best for
the benefit of my patients and abstain from whatever is deleterious and mischievous."*

Extract from the Hippocratic Oath, The World Medical Association Handbook of Declarations, 1985, World Medical Association, Inc.

1. Behaviour change can achieve safer practices

Twenty years into the HIV pandemic, knowledge of HIV among patients and health care workers in some countries has driven consumer demand for safe injection equipment and irreversibly improved injection practices. With growing knowledge of HCV and HBV, similar patterns of consumer demand for safe injections should emerge. HIV prevention programmes can be expanded to include injection safety components.



Consumer demand drives safety in Romania

In the early 1990s, world headlines told of Romanian orphans dying of AIDS due to unsafe injection practices. The resulting outcry, both nationally and internationally, created a high level of awareness. By 1998, 98% of the population were knowledgeable about the risks of HIV from unsafe injections¹ and reuse of dirty injection equipment was eliminated.

Injection-associated HIV infection is no longer reported from Romania.

Opening of a new syringe / needle set in Romania.

¹ Centers for Disease Control: Injection Practices Among Nurses - Vâlcea, Romania, 1998. MMWR 2001; 50:59-61.

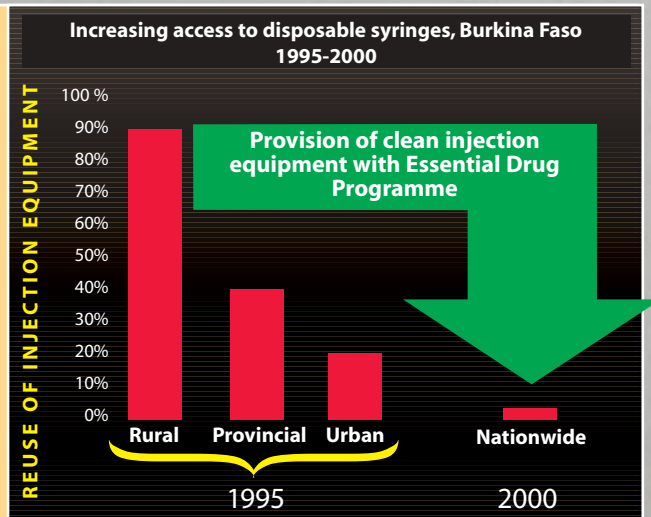


2. Provision of supplies works

Simply increasing the availability of safe injection equipment can stimulate demand and improve practices. Because the cost of safe disposable syringes is low (less than 5 US cents per unit) when compared to the fee paid for receiving an injection (50 US cents on average), patients are usually willing to pay a little extra for safety once they personalize the risks.

Increased access improves practices in Burkina Faso

In Burkina Faso, a revised supply policy that increased the availability of disposable injection equipment through community pharmacies contributed to a 92% decrease in the reuse of non-sterile equipment without major side effects in terms of waste management or in terms of injection overuse. Improvement of injection practices was achieved at low cost to the government because it was based upon a cost recovery scheme.



3. Sharps waste management can be achieved

As waste disposal is frequently not an integral part of health planning, unsafe waste management is common. However, when it is appropriately planned, significant results ensue.

Technical tools are now available to assist countries in developing and implementing simple plans. National waste management strategies require a national policy to manage health care waste, a comprehensive system for implementation, improved awareness and training of health workers at all levels, as well as the selection of appropriate options for local situations.

Available publications



Commitment to planning brings results in Côte d'Ivoire

An assessment conducted in 2000 in Côte d'Ivoire¹ examined 11 health care facilities. Three had good health care waste management practices while the others had contaminated sharps in their environment. The three facilities with good practices had decided to take responsibility for waste management, both in terms of waste collection and waste disposal. Closed sharps boxes were provided to each department and all waste was taken for incineration. The key success factor was having a fully managed plan for sharps waste management.

¹ Medical Waste Management in Côte d'Ivoire, unpublished report, WHO, EPFL, IAGU.



Low cost, locally built incinerators in Africa

Safe and appropriate use of injections is within our grasp

Unsafe injection practices are often viewed as a chronic problem with no easy solutions. However, safe and appropriate use of injections can be achieved by adopting a **three part strategy**:

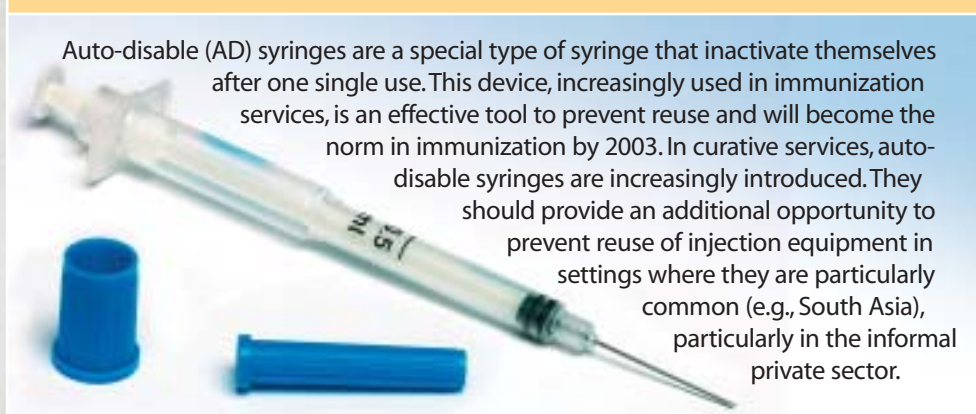
1. Changing behaviour of health care workers and patients.



2. Ensuring availability of equipment and supplies.



Auto-disable syringes



Auto-disable (AD) syringes are a special type of syringe that inactivate themselves after one single use. This device, increasingly used in immunization services, is an effective tool to prevent reuse and will become the norm in immunization by 2003. In curative services, auto-disable syringes are increasingly introduced. They should provide an additional opportunity to prevent reuse of injection equipment in settings where they are particularly common (e.g., South Asia), particularly in the informal private sector.

3. Managing waste safely and appropriately.



Advanced autoclaving:
A waste treatment option adapted to urban settings



Call for action

Ministries of Health can develop a national policy and plans for safe and appropriate use of injections, with appropriate budgeting and financing.

- **HIV/AIDS prevention programmes can** include awareness regarding the risks of unsafe injections within all education and behaviour change activities.
- **Essential drug programmes can** make sterile syringes and sharps boxes available in every health care facility and address injection overuse within the national drug policy.
- **Donors and lenders can** ensure that all supplies of injectables, including vaccines and contraceptives, are delivered with matching quantities of auto-disable (AD) syringes and sharps boxes.
- **Health systems can** ensure sharps waste management as part of their 'duty of care'.



Aide-memoire for injection safety

A highly cost-effective intervention

Provision of single use syringes in health facilities and interactional group discussions between patients and providers are the two elements of a highly effective intervention to improve injection safety. It is also estimated that this intervention implemented in 2000 could have reduced the future burden associated with unsafe injections by as much as 96.5% in the 2000-2030 time period (8.86 million disability-adjusted life years [DALY]). Interventions for the safe and appropriate use of injections can be considered highly cost-effective as the cost per DALY averted is less than one year of average per capita income (\$ 102).

Unsafe injection practices - a plague of many health systems

A safe injection does no harm. Yet breaks in infection control practices are common, causing severe infections which put human lives at risk.



Reuse of syringes and needles in the absence of sterilization exposes millions of people to infection.

The proportion of injections given with syringes or needles reused without sterilization ranges from 1.2% to 75% in transitional and developing countries.

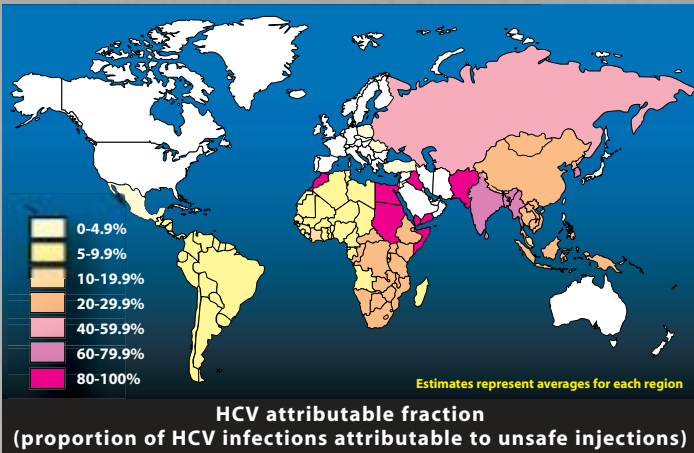


Injections - a dangerous engine of disease

Unsafe injection practices are a powerful engine to transmit bloodborne pathogens, including Hepatitis B virus (HBV), Hepatitis C virus (HCV) and Human immunodeficiency virus (HIV). Because infection with these viruses initially presents no symptoms, it is a silent epidemic. However, the consequences of this silent epidemic are increasingly recognized.

Hepatitis B virus - HBV is highly infectious and causes the heaviest burden of disease: Unsafe injections account for 32% of new HBV infections in developing and transitional countries, with a total of 21 million people infected each year.

Hepatitis C virus - Unsafe injections are the most common cause of HCV infection in developing and transitional countries, causing two million new infections each year and accounting for 40% of cases.



Human immunodeficiency virus - Globally more than 5% of all new HIV infections are caused by unsafe injections, with a total of 260 000 people infected annually. Such proportions can no longer be ignored.

Fear of HIV is a powerful motivation to engage patients and health care workers in safer injection practices.

The high cost of complacency:

Years of life lost worldwide

13 year old boy with chronic liver disease.



HBV, HCV, and HIV cause chronic infections that lead to disease, disability and death a number of years after the unsafe injection. Those infected with hepatitis B virus in childhood will typically present with chronic liver disease by the age of 30, at the prime of their life. This has a dramatic effect on national economies. The burden of disease in 2000 due to past unsafe injection practices reached 501 000 deaths and 10 460 000 disability adjusted life years (DALYs). More than 75% of the burden occurs among persons 15 years of age or older. In addition, unsafe injection practices in the year 2000 will lead to an additional 283 000 deaths in 2000-2030 for a burden of 9 177 679 DALYs.

Ref: **Global Burden of Disease study**, WHO 2002.

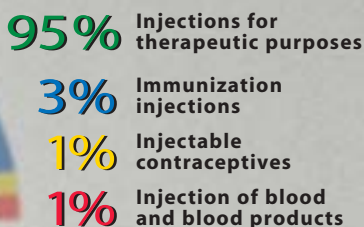
MISUSE AND OVERUSE

INJECTION USE WORLDWIDE

Against all reason: Misuse and overuse of injections

Injections are one of the most common medical procedures. Each year some 16 billion injections¹ are administered in developing and transitional countries. In certain regions of the world, use of injections has completely overtaken the real need, reaching proportions no longer based on rational medical practice. Up to 96% of persons presenting to a primary health care provider receive an injection, of which over 70% are unnecessary or could be given in an oral formulation.

¹ A billion represents one thousand million



Patients prefer injections

because they believe them to be stronger and faster medications. They also believe that doctors regard injections to be the best treatment.

Doctors over-prescribe injections

because they believe that this best satisfies patients, even though patients are often open to alternatives. Prescription of an injection sometimes allows the charging of a higher fee for service.

Better communication between patients and providers can clarify these misunderstandings and reduce injection overuse.



Safe and appropriate use of injections strengthens health care systems

- Prevention of infections with bloodborne pathogens.
- Savings on precious community resources wasted on unnecessary injections.
- Creation of national standards of care.
- Development of an infection control culture.
- Strengthening of key initiatives such as the Expanded Programme on Immunization (EPI).
- Improved donor and public confidence in the health system.
- Better communication between patients and providers.
- Creation of a consumer demand for quality.

WHO / BCT / DCT / 01.3 Rev. 1 (April 2003)

© World Health Organization 2001

This document is not a formal publication of the World Health Organization (WHO), and all rights are reserved by the Organization. The document may, however, be freely reviewed, abstracted, reproduced or translated, in part or in whole, but not for sale or for use in conjunction with commercial purposes.

For more information, visit our website at:

www.injectionsafety.org

or contact: The SIGN Secretariat,
World Health Organization,
Department of Blood Safety and Clinical Technology,
Avenue Appia 20, CH -1211 Geneva, Switzerland,
Tel: +41 22 791 1275, Fax: +41 22 791 4836,
Email: sign@who.int

The Safe Injection Global Network (SIGN) is an international coalition of stakeholders who consider that poor injection practices:

- Waste precious health care resources.
- Expose patients, health workers and communities to unnecessary risks.
- Transmit pathogens on a large scale.
- Reduce productivity through an unacceptably heavy burden of disease.
- Can easily be avoided.

