



# SAFETY OF INJECTIONS

## Questions & Answers

### **What are the risks associated with injections?**

Bloodborne diseases such as hepatitis B, hepatitis C and HIV/AIDS can be transmitted through unsafe injections due to poor injection practices and injection overuse.

### **Can you explain what the differences between safe and unsafe injection practices are?**

A safe injection does no harm to the recipient, does not expose the health worker to any risk and does not result in waste that is dangerous for the community. To achieve this, the injection needs to be administered using a sterile syringe and needle. After administration, sharp equipment needs to be discarded in a puncture-proof container for appropriate disposal. Any break or departure from this procedure represents a risk, rendering the injection unsafe.

### **What diseases can be contracted through unsafe injection practices?**

The diseases most frequently transmitted through unsafe injection practice are hepatitis B (estimated 21 million cases per year), hepatitis C (estimated 2 million cases per year) and HIV/AIDS (estimated 260 000 cases per year). In addition, unsafe injections can cause abscesses and lead to septicaemia. Less frequently, haemorrhagic fevers and malaria can also be transmitted.

### **How many people become infected each year due to unsafe injection practice?**

WHO estimates that annually 21 million hepatitis B infections, 2 million hepatitis C infections and 260 000 HIV/AIDS cases may be caused by re-use of syringes and needles without sterilization.<sup>1</sup> The viruses that can be transmitted through unsafe injections can remain "silent" in the body for a long time before they cause symptoms. Thus, unsafe injections can lead to a silent epidemic that occurs many years after the original events.

### **What is the current WHO estimate of the proportion of HIV infections that may be attributable to this potential source?**

WHO currently estimates that 5% of new HIV infections in developing and transitional countries may be attributable to unsafe health care injections. This estimate varies according to regions, with higher figures for Asia.<sup>2</sup> There is some uncertainty around this estimate and more research is needed to obtain additional data which would provide a more reliable picture of the situation. Studies are particularly needed in Asia, where poor injection practices, including overuse of injections and unsafe practices, are common. In a context of emerging HIV epidemics, these could be an important cause of HIV infections.

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<sup>1</sup> WHO Global Burden of Disease study 2000 (Hauri A. et al, Int J STD and AIDS 2004;15: 7-16).

<sup>2</sup> World Health report 2002. Available from [www.who.int](http://www.who.int)

### **How many injections are administered annually worldwide?**

About 16 billion preventive and curative injections are given each year in developing and transitional countries. Over 95% of all injections given are curative (therapeutic): for every vaccination given, 20 therapeutic injections are administered.

### **How does overuse of injections lead to the transmission of bloodborne pathogens?**

The more injections are given, the more people are exposed to needles and syringes. In addition, if the use of injections exceeds the availability of injection equipment allows, re-use of syringes and needles is likely to occur. Therefore the greater the use, the higher the risk.

### **What are the reasons for injection overuse?**

Patients and health care workers often believe that injections are more effective and act faster than oral medication. In addition, health care workers can charge an increased fee for injections.

### **Are health care workers not aware of the risks of unsafe injection practices?**

In many cases trained health care workers such as physicians, nurses and paramedical staff have not been trained in safe injection practices. Often, they lack the awareness of the risks associated with unsafe practices. In addition, in some communities, untrained lay persons administer injections outside the formal health care sector.

### **Is it difficult to make injections safe?**

The strategies to make injections safe are straightforward. They include community behaviour change induced through communication activities in a supportive environment. Adequate injection equipment must be provided in sufficient quantities and a reliable waste disposal infrastructure must be made available. Many success stories suggest that this is an achievable goal.

### **Why are syringes re-used in the developing world?**

Widespread re-use of syringes and needles in the developing world is due to several factors:

- a lack of awareness regarding the risks associated with syringe re-use
- cultural resistance to waste in countries where resources are scarce;
- a lack of supplies of syringes and needles;
- the absence of infrastructure for the safe collection and destruction of used injection equipment, allowing for scavenging and parallel market development.

### **What constitutes safe syringe disposal?**

Safe syringe disposal requires that syringes and needles be placed in puncture-proof containers (safety box) immediately after use. These boxes must then be collected for incineration or other forms of destruction.

### **What is the cost of unsafe injections?**

First, unnecessary injections waste precious health care resources. Second, the consequences of unsafe injections lead to death and disability. In 2000, WHO estimates that 501 000 deaths occurred because of unsafe injection in the past. In addition, unsafe injections in 2000 will lead to 9 million years of life lost (adjusted for disability) between 2000 and 2030.

### **What are the WHO recommendations for a safe and appropriate use of injections?**

Four key interventions would ensure the safe and appropriate use of injections:

1. Increasing the awareness of the population regarding the risk of HIV and other infections associated with unsafe and unnecessary injections.
2. Building the safe and appropriate use of injections within National Essential Medicine Policies to make sure there are sufficient quantities of single-use injection devices and safety boxes in every health care facility and to make sure that unnecessary injections are avoided.
3. Ensuring that all donors and lenders who support the supply of injectable substances in developing and transitional countries also support the provision of injection devices with reuse-prevention features and safety boxes
4. Managing the waste associated with dirty syringes and needles in a safe and appropriate way.

### **Is injection safety a cost-effective intervention?**

The safe and appropriate use of injections is a sound investment in health. WHO has estimated that interventions implemented in 2000 for the safe and appropriate use of injections would have cost \$102 per year of life saved (adjusted for disability).<sup>3</sup> This cost is under the threshold of one year of average per capita income used by the WHO Commission on Macroeconomics and Health as a criterion for an intervention to be considered very cost-effective.

### **Should HIV prevention and care programmes place a stronger emphasis on the safe and appropriate use of injections?**

Implementation of safe and appropriate use of injections as part of HIV prevention and care programmes is highly desirable and can be accomplished with only a modest shift in the assignment of resources for two reasons:

- (1) Injection safety is not a costly intervention;
- (2) The large majority of HIV infections worldwide are caused by unsafe sexual practices, thus the emphasis of HIV prevention programmes must remain on preventing sexual transmission.

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<sup>3</sup> WHO CHOICE project, World Health Report 2002.