

## **INJECTION SAFETY**

### **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 injection practices, including overuse and more dangerously reuse of injection equipment.

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

A safe injection does not harm the recipient, does not expose the provider to risk and does not result in waste that is dangerous for others. To achieve this, each injection needs to be administered with a new syringe and needle. After administration, sharp equipment needs to be discarded in a puncture proof container for appropriate disposal.

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

The disease most frequently passed on through unsafe injection practices are hepatitis B, hepatitis C and HIV/AIDS. Unsafe injections can also cause abscesses, septicaemia and nerve damage. Less frequently, haemorrhagic fevers and malaria can also be transmitted.

#### **How many people become infected every year due to unsafe injection practices?**

A mathematical modelling based study published in 2014<sup>1</sup> estimated the annual global burden of HBV, HCV and HIV as follows:

*Hepatitis B virus:* 1.67 million HBV infections are associated with unsafe injections

*Hepatitis C virus:* 315 120 cases of HCV infections are linked with unsafe injections

*HIV:* 33 877 HIV infections are caused by unsafe injections

These viruses can remain dormant in the body for a long time before the first symptoms start to appear. Thus unsafe injections can lead to a silent epidemic that occurs many years after the original unsafe injections which caused the infections.

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<sup>1</sup> Pèpin J, Chakra CN, Pèpin E, Nault V, Valiquette L. Evolution of the global burden of viral infections from unsafe medical injections, 2000-2010. PLoS One. 2014 Jun 9;9(6):e99677.

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

It is estimated that 16 billion injections are provided worldwide in developing and transitional countries. Only 5% are given for immunization purposes and 5% for contraceptive and other reasons. 90% of all injections are for medical/therapeutic reasons.<sup>2</sup>

### **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 injection exceeds the availability of supply, it inevitably leads to the reuse of syringes and needles. Therefore the greater the use, the higher the risk.

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

Many patients prefer injections because they wrongly believe that these will provide quick relief or work better than oral medicines. They also believe that prescribers regard injections to be the best treatment. In turn, prescribers over-prescribe injections because they believe that this satisfies the patients. And finally, private practitioners believe that if they do not add an injection to their patient's prescription, they may lose their clientele. Sometimes the prescription of an injection allows them to charge a higher fee as well.

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

Health care workers often lack the knowledge and awareness of the risk associated with unsafe injection practices. In many cases health care workers, including the prescriber and the provider, are not trained in safe injection practices. In addition, in many communities, untrained lay persons are able to administer injections.

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

Achieving injection safety is complex when it is not being practiced. It requires behaviour change of all the key players, namely the prescriber, the provider and the patient. It also requires the introduction of new technology which WHO in 2015 recommended as part of its injection safety guidelines <http://apps.who.int/iris/bitstream/10665/250144/1/9789241549820-eng.pdf>

The guidelines recommend the exclusive use of safety engineered syringes for all injections. These smart syringes have a disabling mechanism which prevents reuse of both syringe and needle.

### **Why are syringes reused in the developing world?**

Widespread reuse of syringes and needles in the developing world is explained by several reasons:

- A lack of awareness of the risks associated with syringe reuse
- Scarce supplies of syringes and needles
- Lack of affordability by the patient to purchase a new syringe leading to the provider reusing the syringe

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<sup>2</sup> [Hutin YJ, Hauri AM, Armstrong GL](#). Use of injections in healthcare settings worldwide, 2000: literature review and regional estimates. [BMJ](#). 2003 Nov 8;327(7423):1075.

- Lack of infrastructure for the safe collection and disposal of sharps

### **What is required for the safe disposal of syringes?**

Safe syringe disposal requires that syringes and needles be placed in puncture-proof containers immediately after use. Incineration is not recommended by WHO. Alternatives to incineration are now available, such as autoclaving, microwaving, steam treatment integrated with internal mixing, and chemical treatment.

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

A study published in 2004 calculated the disability-adjusted life years (DALYs) in 2000-2030 for infections caused by unsafe injections in the year 2000. In 2000, contaminated injections caused an estimated 21 million HBV infections, two million HCV infections and 260 000 HIV infections, accounting for 32%, 40% and 5% of new infections respectively for a total burden of 9 177 679 DALYs between 2000 and 2030.<sup>3</sup>

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

The 2015 Injection Safety guidelines recommend:

- the exclusive use of safety engineered syringes, also called auto disable (AD), reuse prevention (RUP) and sharp injury protection (SIP) syringes by 2020;
- increasing awareness of the population regarding the risk of hepatitis B and C and HIV transmission and other infections associated with unsafe injection practices;
- a more rational use of injections, through national essential medicine policies, to ensure that injection devices and sharps boxes are available in every health facility;
- ensuring that unnecessary injections are avoided;
- ensuring that all donors and lenders who support the supply of injectable substances in developing and transitional countries also support the provision of reuse prevention devices and sharps boxes;
- the appropriate management of sharps waste.

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

Preliminary findings from a WHO-commissioned study suggest that for every US dollar invested in injection safety, there is a potential saving generated of 14 US dollars.

### **Should HIV prevention and care programmes and hepatitis prevention 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 or hepatitis prevention programmes is highly desirable. With a modest shift in the assignment of resources, many lives could be saved.

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<sup>3</sup> Hauri AM, Armstrong GL, Hutin YJ. The global burden of disease attributable to contaminated injections given in health care settings. *Int J STD AIDS*. 2004 Jan;15(1):7-16.