

**INJECTION SAFETY FACT SHEET**

Fact Sheet No 231

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**Misuse and overuse of injections worldwide**

There are 16 billion injections administered every year around the world. Out of these 5% are given for immunization purposes among children and adults and another 5% for injectable contraceptives and other procedures. The majority (90%) are given for therapeutic purpose. In many cases these injections are unnecessary and can be replaced with oral medicines.

Patients prefer injections because they believe that they 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 private practitioners believe that if they do not add an injection in the prescription they may lose the clientele. Sometimes prescription of an injection allows charging of a higher fee for service. Empowering the patient to address the social inhibition aspect of questioning the prescriber can help clarify this misunderstanding and can help to reduce over use of injections.

**Unsafe injection practices: a health systems problem**

Unsafe injections put patients and providers at risk of acquiring infections. Intentional reuse of syringes and needles expose millions of people to infections. According to a 2010 study between 2000 to 2010, in developing countries and transitional economies, the average number of injections per person per year decreased from 3.40 to 2.88, while the proportion of re-use of injection devices dropped from 39.8% to 5.5%. Combining both factors the number of unsafe injections per person per year decreased from 1.35 to 0.16. Even if substantial progress has been made, the Eastern Mediterranean region remains problematic, with 0.57 unsafe injections per person per year. In sub-Saharan Africa and Latin America, people now receive on average only 0.04–0.05 unsafe injections per year.<sup>1</sup> Some of the credit for reducing the global reuse proportion goes to the efforts of WHO injection safety programme which closely worked with ministries and other partners in solving this problem.

Inappropriate sharps management exposes health-care workers and the community to risks of injuries. Manual scavenging of health-care waste and sharps is common in some countries. The handlers of this material are at immediate risk of sharps injuries and acquiring infections.<sup>2,3</sup>

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

<sup>2</sup> Tamplin SA, Davidson D, Powis B, O'Leary Z. Issues and options for the safe and destruction and disposal of used injection materials. Waste Manag. 2005;25(6):655-65.

<sup>3</sup> Mujeeb SA, Adil MM, Altaf A, Hutin Y, Luby S. Recycling of injection SA equipment in Pakistan. Infect Control Hosp Epidemiol. 2003 Feb;24(2):145-6.

## **Burden of disease associated with unsafe injection practices**

Unsafe injections have the potential to transmit infections including hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV). Often infection with these viruses presents no symptoms and spreads as a silent epidemic. However, the consequences of unsafe injections are globally recognized.

The risk of acquiring blood-borne infections from a needlestick injury from a needle used on an infected patient is 30% for hepatitis B, 1.8% for hepatitis C and 0.3% for HIV.<sup>4,5,6</sup>

A mathematical modelling study published in 2014<sup>7</sup> estimated the global burden of HBV, HCV and HIV.

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

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

**HIV:** 33,877 HIV infections were caused by unsafe injections

HBV, HCV and HIV are chronic infections that lead to death and disability. Children not immunized with hepatitis B vaccine and exposed to the virus will typically present with chronic liver diseases by the age of 30 years, at the prime of their life. A study published in 2004 calculated 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%, respectively, of new infections for a burden of 9,177,679 DALYs between 2000 and 2030.<sup>8</sup>

## **Safe and appropriate use of injections is possible**

Unsafe injection is a complex problem. However, it is achievable by adopting a multi prong approach and commitment from key stakeholders.

## **WHO 2015 injection safety guidelines**

The injection safety guidelines <http://apps.who.int/iris/bitstream/10665/250144/1/9789241549820-eng.pdf> launched in 2015 recommends Member States to switch to exclusive use of safety engineered injection syringes by 2020. These syringes are designed to prevent reuse.

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<sup>4</sup> Lanphear BP, Linnemann CC Jr., Cannon CG, DeRonde MM, Pender L, Kerley LM. Hepatitis C virus infection in healthcare workers: risk of exposure and infection. *Infect Control Hosp Epidemiol* 1994;15:745–50.

<sup>5</sup> Bell DM. Occupational risk of human immunodeficiency virus infection in healthcare workers: an overview. *Am J Med* 1997;102(suppl 5B):9–15.

<sup>6</sup> Mitsui T, Iwano K, Masuko K, et al. Hepatitis C virus infection in medical personnel after needlestick accident. *Hepatology* 1992;16:1109–14.

<sup>7</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.

<sup>8</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.

Auto disable (AD) syringes are already used in the immunization programmes since early 2000. Reuse prevention (RUP) syringes are recommended by WHO for all injections. Sharp injury protection (SIP) are recommended for prevention of needle-stick injuries.

This new policy represents a decisive step in a long term strategy to improve injection safety by working with countries worldwide. The 2015 guidelines recommends developing policies and standards for procurement, safe use and safe disposal of syringes that have the potential for re use in situations where they remain necessary including syringe exchange programmes for people who inject drugs. Continued training of health-care workers on injection safety including the smart syringes. WHO is calling on manufacturers to begin or expand production of smart syringes that meet WHO pre-qualification standards.

### **Key features for advocacy**

The key feature of the injection safety global campaign are:

- Political commitment
- Communication strategy and WHO global injection safety initiative branding
- International donors' engagement strategy
- Industry engagement strategy
- Emphasis on health-care workers' safety, education and training
- Public awareness raising and patient education and involvement
- Evaluation plan and indicators

### **Donors and stakeholders engagement**

- Recommendation for transition to the exclusive use of WHO prequalified RUP/SIP devices in all countries by 2020
- Urging donors agencies to fund and only procurement of safety engineered devices
- Recommendation to finance appropriate quantities of safety engineered injection syringes, single use diluents, safety boxes and the cost of sharps waste management

### **The 7 steps of a safe injection**

<https://www.youtube.com/watch?v=nzv4wkQkqQo&feature=youtu.be>

1. Clean work space
2. Hand hygiene
3. Sterile safety engineered equipment
4. Sterile vial of medication and diluent
5. Skin cleaning
6. Appropriate collection of sharps
7. Appropriate waste management

For Further information please visit: <http://www.who.int/infection-prevention/en/>