



# WORLD HEALTH ORGANIZATION

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## **Injection safety**

### **Report by the Secretariat**

1. A literature review published in 1999 indicated that, of all medical procedures, injections are probably the most common. About 12 000 million injections are administered each year throughout the world. Less than 10% are for immunizations. Many of the therapeutic injections, the widest application, could be avoided. In many countries, both patients and health care workers prefer medicines to be administered by injection. Reportedly, patients ask for injections because they believe that medication is more efficacious by that route and that the pain of the injection is a marker of that efficacy. Reasons for health care workers to inject excessively include the desire to respond to a perceived patient preference, the wish to monitor compliance directly and, in some instances, the possibility of charging a higher fee for service. Overall, unnecessary injections lead to high out-of-pocket health care expenses for patients and their families.

2. Many injections administered in the world are unsafe. Of particular concern is the reuse of injection equipment without sterilization – a frequent practice in developing countries and those in transition, where it is common simply to rinse syringes and needles in containers of tepid water between injections. In these countries, injections account for a high proportion of new infections due to hepatitis B and hepatitis C viruses. Each year, globally, reuse of dirty injection equipment causes an estimated eight to 16 million infections with hepatitis B virus, 2.3 to 4.7 million infections with hepatitis C virus, and 80 000 to 160 000 infections with HIV. Together, these chronic infections are responsible for an estimated 1.3 million early deaths and 26 million of years of life lost, and lead to US\$ 535 million in direct medical costs.

3. To reduce overuse of injections and to assure safe injection practices, multidisciplinary strategies comprising three elements should be implemented. First, there needs to be a change in behaviour: patients and health care workers should be encouraged to adopt safe practices and to avoid unnecessary injections. Second, sufficient quantities of clean injection equipment should be available in each health care facility. Third, mechanisms should be in place so that “sharps” (i.e. needles and syringes) are so disposed of as to ensure that dirty injection equipment is not reused and the risk of accidental needle-stick injuries is minimized.

4. Interventions based on each of these three elements have proven to be successful and demonstrated that poor injection practices can be eliminated. For example, in Indonesia, behavioural change interventions have resulted in a substantial and sustained decrease in the overuse of injections. In Burkina Faso, increasing the availability of clean, disposable injection equipment through community pharmacies has almost eliminated unsafe injection practices. In a pilot project in Côte d’Ivoire, the introduction of small-scale, locally-built incinerators and at the same time training of health care workers have successfully eliminated dangerous needles and other sharps waste from the environment.

5. In every country, efforts to ensure safe and appropriate use of injections require collaboration between all partners. Because multidisciplinary interventions are needed, the basis of preventive activities should be careful coordination of already existing initiatives rather than the creation of new programmes. National health authorities responsible for health promotion, HIV prevention, integrated management of childhood illnesses and blood transfusion services should promote safer behaviour among patients and health care workers. Similarly, national authorities responsible for access to essential drugs, immunization services and family planning should increase the availability of clean injection equipment. It is recommended that responsibility for safe management of health care waste should be assigned to health care services.

6. Injections are given in most health care facilities. Poor practices can potentially lead to a high burden of disease. Markers of injection practice may therefore be considered as critical indicators of quality for health-system assessment, particularly in countries that are reforming such systems.

7. With three different types of injection equipment available for use in health care facilities countries need to make choices. Although reusable syringes and needles can be effectively sterilized with steam, evidence indicates that that result is difficult to ensure and that breakdown in such systems leads to lack of sterilization. Use of disposable injection equipment may create a consumer demand for safety as patients can be encouraged to ask to witness the breaking of the sterility seal of new injection equipment. The quality of injection equipment should be regulated by national authorities, so that international standards can be met and unsafe reuse of disposable equipment be actively prevented. Finally, “auto-disable syringes”, which are inactivated automatically after one use, provide an additional opportunity to prevent dangerous reuse of injection equipment. In 1999, WHO formulated guidelines calling for universal use of auto-disable syringes by immunization services by the year 2003. Auto-disable syringes for immunization are now widely available on the market at a cost close to that of standard disposable syringes, but the availability of larger size auto-disable syringes designed for therapeutic injections is still limited.

8. Unsafe injections cause many infections by bloodborne pathogens. Other sources of such infections include transfusion of unsafe blood or blood products and other unsafe percutaneous or permucosal procedures. Thus, injection safety strategies should be integrated within a national strategy to prevent exposure to bloodborne pathogens from all sources.

9. Because unsafe injections waste precious health care resources, transmit bloodborne pathogens on a large scale and can be eliminated, WHO has increased its activities to improve injection safety. First, WHO hosts the secretariat of the Safe Injection Global Network, a coalition, created in 1999, of stakeholders who strive for safe and appropriate use of injections worldwide. Working within a common strategic framework, the secretariat coordinates the activities of the network. Second, WHO has coordinated its relevant activities, which include safety of immunization injections, rational use of medicines, blood transfusion safety, laboratory safety, medical devices, management of health care waste, prevention of viral hepatitis, and prevention of injection drug use.

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