Improving Access to Injection Equipment
to Improve Injection Safety

Policy Analysis

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1. Worldwide, injections are one of the most common medical procedures, with an estimated 12 thousand million injections administered each year. A large majority, more than 90%, of these injections are administered for curative purposes. For every vaccination injection, 20 curative injections are administered. There is evidence that therapeutic injections have been overused for many years. The WHO department of Essential Drugs and Medicine Policy proposed the proportion of outpatients who receive an injection for a health-care visit as indicator to monitor injection use in health-care setting (WHO/DAP/94.12). Data indicate that in some developing countries, this proportion of prescriptions including at least an injection can reach 56%. In addition, among injections administered for therapeutic purposes, between 70% and 99% were found to be unnecessary. In many cultures, patients and health-care workers prefer medicines to be administered by injection.1

2. A safe injection is one that does not harm the recipient, does not expose the health-care worker to any avoidable risks and does not result in any waste that is dangerous for the community. However, unsafe injection occur in many parts of the world and more particularly in developing countries, it has been estimated up to 50% of injections are administered with syringes and needles re-used in the absence of sterilization. Transmission of bloodborne pathogens, including hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV) through unsafe injections has long been reported and causes a heavy burden of disease. As part of the 2000 update of the Global Burden of Disease project, a mathematical model was developed to estimate the fraction of new HBV, HCV and HIV infections that is attributable to contaminated health-care injections. Preliminary analysis of this study suggests that annually, worldwide, unsafe injections may account for 35% of new HBV infections, 55% of new HCV infections and 2% of new HIV infections.2

3. To prevent the transmission of bloodborne pathogens that result from unsafe injections, injection safety must be achieved and injection overuse must be reduced. First, behaviour change needs to be promoted to move patients and health-care workers away from unsafe and unnecessary injections and toward oral

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medications. Second, a continuous supply of sufficient numbers injection equipment must be available in health-care facilities to eliminate the reuse of syringes and needles in the absence of sterilization. Third, sharps waste management must be established to eliminate the risks of reuse of dirty needles and accidental needlestick injuries.

4. Continuous and sufficient quantities of injection equipment can be made available in health-care facilities through a simple logistic approach that is costed, budgeted and funded. However, health systems commonly fail to ensure adequate and sufficient supplies of injection equipment. A system analysis conducted by the logistics project of WHO’s African Regional Office (AFRO) reported that in immunization services of sub-Saharan African countries, funds made available to purchase vaccines rarely covered injection equipment. This failure to systematically fund sufficient supplies of injection equipment as part of immunization services was identified as a key determinant of widespread reuse of syringes and needles in absence of sterilization.\(^3\)

5. The WHO, the United Nations Children’s fund (UNICEF), the United Nations Population Fund (UNFPA) recommended in a Joint Statement in 2000 that sufficient syringes and safety boxes be “bundled” with consignments of vaccines to address the issue of insufficient supplies of injectable immunization equipment. Because Auto-Disable (AD) syringes offer the highest level of safety and are available in sizes that allow their use for immunization, the WHO/UNICEF/UNFPA “bundling” policy called for their exclusive use for the administration of all vaccines by the year 2003.\(^4\) The International Federation of Red Cross and Red Crescent Societies (IFRC) also signed the “bundling” policy. In June 2001, the board of the Global Alliance for Vaccines and Immunization (GAVI) endorsed the “bundling” policy at their fifth meeting in London. A commitment was made to apply the WHO/UNICEF/UNFPA Joint Statement to “bundle” AD syringes and safety boxes to new vaccines funded by the Vaccine Fund. To facilitate transition to AD syringes, the GAVI board took the “bundling” policy further, and decided to provide AD syringes and safety boxes for all other traditional routine EPI injections for three years in all countries that received approval for application by the Vaccine Fund. Similarly, in 2001 the United States Agency for International Development (USAID) endorsed the “bundling” policy for the supply of medroxyprogesterone acetate for family planning program. The Contraceptive and Logistics Management Division (CLM) of USAID will now bundle AD syringes and safety boxes with shipments of Depo-Provera. Thus the concept of “bundling” is becoming a norm for major donors in the preventive health-care sector.

6. In the curative health-care sector where 95% of all injections are provided, the “bundling” concept has not yet been implemented. Although the WHO Model List of Essential Drugs specifies that 137 of 306 drugs or active ingredients could be made available in injectable form, the list does not specify the need to “bundle” injection equipment and safety boxes. The Interagency Guidelines for Drug Donations developed by WHO in cooperation with major international agencies

\(^*\) Future revision of the list may consider re-examining the evidence supporting inclusion of these 137 drugs or active ingredients.
active in humanitarian relief, were formulated to improve the quality of drug donation. These guidelines make no reference to the “bundling” of injection equipment and safety boxes to injectable medications. In the absence of a “bundling” policy framework, drug donations may deliver large quantities of injectable medications in developing and transitional countries where unsafe injection occur without supplying injection equipment and safety boxes. A recent drug donation to Moldova included streptomycin but no injectable equipment. In Moldova, an epidemiological study suggests that unsafe injections may account for 52% of new cases of HBV infections.

7. Interventions done to increase the availability of injection equipment in curative services have improved injection safety. In Burkina Faso, increasing availability of disposable injection equipment through community pharmacies nearly eliminated the reuse of non-sterile injection equipment from 50% in 1995 to 4% in 2000 in the country. During the same time interval, the proportion of health-care facilities equipped with a community pharmacy increased from 5% to 95%. This new network of community pharmacies improved access to safe disposable injection equipment: the sale of 5ml syringes and needle sets, the most commonly used size of syringes in Burkina Faso has more than doubled in four years from 1996 to 2000. Of interest, there is no data to suggest that improved access to injection equipment increased the irrational use of injections: the indicator measuring the proportion of prescriptions including at least one injection remained stable during this period (26.5% in 1995 versus 23.8% 2000).

8. To eliminate reuse of non-sterile syringes and needles and prevent transmission of bloodborne pathogens, all authorities and organizations in charge of drug supply and drug donations should “bundle” all orders and deliveries of injectable medications with adequate number of disposable syringes, needles and safety boxes. Because AD syringes are not currently available in sizes that allow their use for curative purposes, curative drugs should be supplied with disposable syringes and needles. AD syringes should be envisaged to become the standard for curative injections as they become available in curative size.

9. In practice, three actions are needed. First an explanatory statement in the WHO Model List of Essential Drugs should relate to injectable drugs. This statement should specify that all supplies of injectable drugs mentioned in the WHO Model List are to be “bundled” with appropriate supplies of injection equipment and sharps boxes. The vaccines section in the list should have its separate explanatory footnote reviewing the WHO/UNICEF/UNFPA “bundling” policy and remind that AD syringes are the equipment of choice for administering vaccines. Second, with respect to drug donations, the Interagency Guidelines for Drug Donations should specify in its guidelines chapter that all donated injectable drugs should be delivered with matching quantities of injectable equipment and safety boxes to the recipient country and that all organizations involved in drug donation should ensure they are following this recommendation. Third, specific indicators should be developed to monitor access to safe injection equipment.
Reference


5. WHO press release 2001/43.

