Policy analysis
Management of Health-care wastes

(intended to provide a quick overview of the topic at policy-maker level, in particular at national level)

Problem statement

Improper management of wastes generated in health care facilities can have direct health impacts on the community, the personnel working in health-care facilities, and on the environment. In addition, environment polluted by inadequate treatment of waste can cause indirect health effects to the community.

Wastes produced in health facilities include sharps (syringes, disposable scalpels, blades etc.), non-sharps (swabs, bandages, disposable medical devices etc.), blood and anatomic waste (blood bags, diagnostic samples, body parts etc.), chemicals (solvents, disinfectants etc.), pharmaceuticals, and may be infectious, toxic, create injuries or radioactive.

The risk to the community includes intentional and unintentional exposure in the absence of a safe waste management system. Intentional exposure occurs through the widespread reuse of disposable materials (especially syringes) in developing countries and results in the main disease burden caused by inadequate health-care waste management. Main disease outcomes of concern include HBV, HCV and HIV transmission. Unintentional injuries may occur when the community is exposed to inadequately disposed waste, for example through scavenging on waste sites.

The risks to waste workers and hospital personnel who handle health-care wastes are currently being investigated. If adequate measures are taken, the risks to this segment of the population should be low.

Most cultures are sensitive to the aesthetics of health-care wastes or perceive the risk as being high to the point that waste workers sometimes refuse to handle the wastes.

To date no low-cost, environmentally friendly and safe disposal option for health-care waste are available. Low-cost options are often polluting and are therefore indirectly potentially harmful to human health. The absence of management however also puts human health at risk. Significant improvements can however be achieved by management options such as purchase policies, and isolation and proper treatment of key segments of the waste.

Analysis of causes

There are a number of reasons leading to improper exposure to health-care wastes. Some of the most common reasons are listed below:

- Lack of awareness about the inherent hazards caused by improper management of health care wastes;
- Insufficient allocation of resources (financial and human) for the safe management of the wastes;
- Improper control of the waste management system;
- Absence of a national policy for the management of health care wastes;
- Lack of or inadequate regulatory framework, and
• Insufficient evidence on the negative impact of health-care wastes on certain professional groups.

• Insufficient information on sound waste management and treatment options and their benefits.

In addition, the lack of political will to develop and implement a proper management system plays an important role on the management of health care wastes. The main relations between causes and effects are outlined in Figure 1.

There may also be other reasons that are specific to a given geographical region.

Figure 1: Interference of causes and effects of inadequate waste management

Remark: Additional health effects may be caused, but have not been sufficiently documented.

Available guidance

Guidance on various aspects of health-care waste management is available. Additional guidance for specific types of settings currently is under preparation. Case studies in developing countries are being documented and compiled.

Training material is available for policy makers and hospital managers on the management of health care wastes. Training materials for personnel of health-care
establishments should be prepared at national or local level taking into consideration the specific conditions of the country.

**Available technologies**

A variety of technologies have been developed for the storage, collection, treatment and disposal of health-care wastes particularly for those wastes generated in industrialized countries. Several types of treatment and disposal processes have been applied (incineration, micro waving, chemical treatment, melting etc.), with varying degrees of safety, cost and impact on the environment. None of the available low-cost treatment devices (i.e. below US$ 500) are however safe and environmentally friendly. In developing countries, a trade-off has to be made between direct health risks from absence of waste management leading to reuse of syringes, and indirect health risks created by environmental pollution (e.g. by production of dioxins from inadequate incineration).

Progress could be made in waste minimization practices, in particular in the development of materials and products leading to less waste, or less harmful waste when disposed of.

**Implementation**

Safe waste management systems are lacking in many health care establishments and countries; reuse of disposable syringes is widespread in developing countries; workers often are insufficiently protected: Implementation of safe systems is far from satisfactory in many countries, and in particular in developing countries.

**Basic requirements for implementation at national level**

Basic requirements for improvement include the following:

- Assessment of the situation
- Training/behavioural change
- Availability of equipment

A checklist of the main activities/structures which are required is summarized as follows:

- ✔ Commitment/national policy
- ✔ Designated authority
- ✔ Assessment of the situation
- ✔ Regulatory framework and national guidelines
- ✔ Regional or national treatment/disposal policies
- ✔ Purchasing policies
- ✔ Training system
- ✔ Equipment of health-care facilities
- ✔ Periodic review of the system
- ✔ Monitoring of implementation