



World Health Organization

Health-care waste management

Guidance for the development and implementation of a National Action Plan

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Contacts

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You can download this document from the following WHO website:
www.healthcarewaste.org

1 Introduction

- This guidance document is part of an overall WHO strategy which aims at reducing the disease burden caused by poor health-care waste management (HCWM) through the promotion of best practices and the development of safety standards. Further information on the topic of HCWM can be found at the following website: www.healthcarewaste.org
- The mismanagement of healthcare wastes (HCW) remains a major problem in many health-care facilities in low income countries. Poor HCWM is associated with adverse effects on human health and the environment.
- To significantly improve the management of health-care wastes, governments must develop medium and long term national strategies either separately or as part of their national solid waste management policies.
- This document provides guidance to assess and analyse the HCWM situation at the national level so as to be able to draft up a National Action Plan (NAP), with the aim of improving the overall HCWM system in the country.
- The draft NAP would then be reviewed by persons involved in the national or regional policy setting, interested donor agencies, NGOs and other concerned organizations or stakeholders and roles and resources for its implementation identified.

2 Objectives

- To facilitate the analysis of national HCWM problems and to develop strategies for the safe management of HCW in the country.
- To develop a HCWM NAP which is protective of both human health and the environment and takes into consideration local, social, economic and environmental factors.
- To set priority actions through a NAP in order to tackle the most sensitive problems related to HCWM (e.g. disposal of sharps or expired drugs) and to present these actions as a part of a more global framework.
- To identify ways of financing the management of HCW by proposing parts of the NAP to donor agencies.

3 Audience

- National policy makers in charge of developing, implementing and evaluating HCWM plans at the national level: Ministry of Health, Ministry of Finance, Ministry of Environment.
- International organizations, institutions or donor agencies involved in the HCWM sector and ready to allocate part of their budget in programmes aiming at improving hygiene in health-care facilities.
- Regional administrators, municipal planners or health-care professionals.

4 Guidance to assess the management of HCW at the national level

- A careful initial assessment must be carried out to set up the future NAP. Sufficient general and specific information on the health and waste management sectors must be gathered in order to propose realistic actions / options taking into consideration the social, economical and cultural context in which the NAP has to be developed.

- The initial assessment aims at distinguishing between urgent short-term and medium to longer-term actions that the NAP has to address.
- A representative sample of the different categories of health-care facilities must be selected and visited. During the interviews, you can use the *rapid assessment tool* developed by the WHO¹. Information on the treatment processes in each category of health-care facility must be gathered, analysed and a mapping of the existing facilities set up.
- It is important to understand the role and the involvement of the main actors and stakeholders in the HCWM process in order to identify those susceptible to support and implement the actions contained in the NAP.

The economic situation

- You must take into consideration the economic situation of the country in which you plan to develop a NAP in order to be able to propose realistic solutions. A brief analysis of the current economic situation and the recent history of the country can actually help you in determining the possibilities for the government to be involved in the HCWM sector.

The national health system

- Give a rapid overview of the organisation of the national health system, including an inventory of the national institutions that are involved in the management of HCW. Knowing who is responsible of what at the different levels (national, regional and local) is fundamental.
- An indication on the national public health budget must be given: percentage of GDP, annual budget allocated by the State for the health sector, analyse of the ventilation between expenses in routine like salaries, new expenses planned.
- Give an indication on how the costs are recovered within the health system. Analyse what is the real part of the budget dedicated to the management of HCW in the health-care facilities.

The legal framework

- Describe the current legislation related to HCWM, environmental protection and solid waste management as well as infection control within health-care facilities. Focus on the links between the treatment facility technologies you may propose in the NAP and the current legislation. Check whether the legislation is ensuring health protection and how it should be reinforced to impulse a real change in the HCWM practises in the health-care facilities.
- Make an inventory of the rules and regulations which may exist within health-care facilities related to hygiene of the premises and duties of (non)medical staff concerning HCWM.

¹ This tool can be requested at the WHO headquarters in Geneva hcwaste@who.int or can be directly downloaded from the website <http://www.healthcarewaste.org>.

The treatment processes of the HCW

- Describe the different types of waste streams found in the country; the equipment used at the different steps (collection, containment, storage, transport...). Analyse the role of the different actors involved in the management of health-care wastes, including the Ministry of Health and the Ministry of Environment, Municipalities and regional authorities.
- Estimate the quantities of HCW generated at country level (kg/bed/day or kg/facility/day) according to the type of health-care facility in the country.
- Make an inventory of the existing treatment / disposal facilities and their operational status for all health-care facilities.
- Make an inventory of the current management practices within the health-care facilities and analyse the risks generated for the (non)medical staff and for the patients as well as for the communities (ref. SIGN Injection Safety Tool). Give an indication of the kind of training on HCWM that (non)medical staff gets in the health-care facilities. Assess what training / educational materials are available at all levels and if they are used / distributed properly.

The roles of the actors involved in the HCWM system

- Identify the key actors such as the Ministry of Health, Ministry of Finance and Ministry of Environment which could have a major role in the implementation of the NAP.
- Analyse the role, the possibilities and the limits that each actor may have in the management of health-care wastes: central and regional authorities, municipalities, directors and administrators of health-care facilities, private firms, donor agencies, NGOs...

Synthesise the information

- Analyse the information gathered through your survey to develop a draft of a NAP.
- Try to perform a SWOT analysis (Strengths, Weaknesses, Opportunities and Threats) of the current HCWM system so as to propose a realistic NAP.
- Identify and analyse the health risks related to the current HCWM practices. What are the greatest risks posed by HCW, groups at greatest risk, part of the waste stream causing the greatest risk, etc.

5 Guidance to draw up and implement a National Action Plan

Objective 1 : Define the general framework to draw up, validate and implement the National Action Plan (NAP)

- Strategy**
- Organise a national workshop with the key actors of the country involved in the management of health-care wastes.
 - During this workshop, assign a National Committee on health-care waste management involving the key actors of the country.
 - Request the assignment of a focal point within the Committee, in order to lead and facilitate all activities
 - The National Committee should discuss, validate the NAP and supervise its implementation. Always involve staff from relevant Ministries like the Ministry of Health and the Ministry of Environment.
 - The National Committee should designate institutions to be involved in the NAP and define their responsibilities. This Committee should also ensure ongoing / final evaluations to measure progresses / results of the implementation of the NAP.

Check list of actions	<i>Fill in by yourself</i>			
	<i>Indicators of achievement</i>	<i>Coordination body</i>	<i>Duration (pers.month)</i>	<i>Cost (local currency)</i>
<input type="checkbox"/> Organise a national workshop to review and validate the proposed National Action Plan <input type="checkbox"/> Designate the National HCWM Committee and the authorities in charge of the implementation of the NAP at regional / local levels <input type="checkbox"/> Establish the criteria for the evaluation of the NAP during its implementation <input type="checkbox"/> Raise and identify resources and funds <input type="checkbox"/> Inform national, regional and local authorities of the starting up of the NAP and involve them in its implementation <input type="checkbox"/> Find external expertise to support the implementation of the NAP (optional) <input type="checkbox"/> Ensure ongoing and final evaluation. Update the NAP as necessary				

Key points

- Who are the major actors in the sector ? What is their degree of involvement ? How much can they commit themselves ?
- Is there any bilateral, multilateral or private agency involved in the health or environmental sector in the country that could be interested in supporting the implementation of the NAP ?
- Which priority actions will need to be defined during the workshop ?

Objective 2 : Assess the health-care waste management within the country and propose options for the health-care facilities

- Strategy**
- A national survey (cf. chapter 4) carried out in a well stratified sample of facilities should help you to assess the HCWM situation in the country and choose the best HCWM technical options for HCW segregation, collection, containment, storage, transportation and disposal according to 1) the type of HCW and, 2) the size and the location of the health-care facilities.
 - The technical and managerial options should be consigned in national directives and national guidelines before providing infrastructure and equipment to health-care facilities based on the conditions at the site. In certain specific contexts, it is advisable to implement pilot projects before setting up the NAP.

Check list of actions	<i>Fill in by yourself</i>			
	<i>Indicators of achievement</i>	<i>Coordination body</i>	<i>Duration (pers.month)</i>	<i>Cost (local currency)</i>
<input type="checkbox"/> Conduct a national survey <input type="checkbox"/> Analyse data and develop options <input type="checkbox"/> Establish national directives for the options selected defining the procedures of segregation, packaging, collection, containment, transport, treatment and final disposal accordingly <input type="checkbox"/> Write a specific technical guideline for HCWM <input type="checkbox"/> Select and size the HCW treatment facilities accordingly <input type="checkbox"/> Provide the health-care facilities with adequate infrastructures and equipment				

Key points

- Compile and analyse the previous studies / projects already carried out on the subject.
- Pick appropriate HCWM solutions for different settings (for instance: make a choice between a centralised vs. decentralised HCWM system).
- Ensure that the technical options you plan to implement in the NAP fit with the operation and maintenance capacities of health-care facilities.
- You must make sure that manipulation procedures of HCW you are proposing are reduced to a minimum. They should be as simple as possible and should be standardised all over the country.

Objective 3 : Reinforce the national and regional legal framework as well as the rules and regulations within the health-care facilities

- Strategy**
- The legal framework is the backbone of the HCWM plan at national level. It is of the utmost importance to define clearly the duties and responsibilities of each actor involved in the HCWM process, at national, regional and local levels.
 - Laws and bylaws must be created, consolidated or updated, depending on the context. In the meantime, existing rules and regulations within the medical facilities must be developed, integrated and consigned in regional and local HCWM plans.
 - In order to have an efficient legal framework, control procedures have to be established with the aim of 1) securing the HCWM disposal process and, 2) inciting the medical, paramedical and non medical staff in being responsible at their own level. The sanitary inspectors are generally in charge of this task.

Check list of actions	<i>Fill in by yourself</i>			
	<i>Indicators of achievement</i>	<i>Coordination body</i>	<i>Duration (pers.month)</i>	<i>Cost (local currency)</i>
<input type="checkbox"/> Analyse all the existing laws and bylaws <input type="checkbox"/> Update or if necessary, establish a law or a directive related to HCWM indicating clearly the responsibilities for HCWM at all levels based on the « polluter pays » principle ² . <input type="checkbox"/> Define administrative responsibilities and penalties for non-respect of HCWM rules. <input type="checkbox"/> Establish procedures and documents for controlling the flow(s) of HCW and increasing the responsibility of the staff. <input type="checkbox"/> Set-up directives for the sanitary inspectors				

Key points

- Link the reinforcement of the legal framework with the hazardous wastes and solid wastes management policies (if they exist).
- Clearly define responsibilities at all administrative levels (national, regional and local).
- Check if there are specific options which can be proposed and formalised legally (allow appropriate choices according to the setting).
- Propose laws or directives pushing actors to adopt less polluting technological choices.

² The « polluter pays » principle is a rule to follow and implies that all producers of waste are legally and financially responsible for the safe and environmentally sound disposal of the waste they produce. This principle also attempts to assign liability to the party that causes damage.

Objective 4 : Develop specific financial resources to cover the costs of the management of health-care wastes

- Strategy**
- Without specific financial resources for capital and running costs, it is impossible to get sustainable improvement of HCWM. Health-care waste management is an integral part of health-care and thus needs to be budgeted for.
 - For centralized HCWM options (e.g. regional or national), a standardised procedure must be used to estimate the real costs of HCWM and a specific recovery mechanism must be found in order to ensure the sustainability of the options proposed in the NAP.
 - The HCWM costs have a better chance to be taken into consideration if specific budget lines are developed at all levels of the accountancy (from national to local). You must identify the appropriate institution through which the recovery mechanism can be implemented.

Check list of actions	<i>Fill in by yourself</i>			
	<i>Indicators of achievement</i>	<i>Coordination body</i>	<i>Duration (pers.month)</i>	<i>Cost (local currency)</i>
<input type="checkbox"/> Set up specific budget lines. <input type="checkbox"/> Estimate the total cost (capital and foreseeable running costs) of the options proposed in the NAP for the management of HCW. <input type="checkbox"/> Define and set up a specific mechanism to recover the costs in a centralized system (taxes for example). <input type="checkbox"/> Identify the institution to be in charge of the implementation of the recovery system and provide it with all the necessary tools to perform its work (staff, computers...).				

Key points

- A cross-check mechanism should be set up so as to be able to have an efficient control system of the way the amounts destined to the management of HCW are used.
- Involve the Financial Directions of the Ministry of Health, of the Ministry of Environment and the Ministry of Finance.
- Assign oversight responsibilities to appropriate staff in the Ministry of Health as well as at the health-care facilities level.

Objective 5 : Set up an awareness campaign for the communities and provide training on HCWM for medical staff

- Strategy**
- Inform as widely as possible the population and the health-care facility staff of the dangers linked with bad management of HCW.
 - Information must be provided through different means of communication (traditional, radio and TV, sketches, etc...).
 - Adequate training programmes must be organised for each of the major actors in the HCWM process within the country.
 - It would also be useful to develop research programmes to estimate the (in)direct costs linked with bad management of HCW.

Check list of actions	<i>Fill in by yourself</i>			
	<i>Indicators of achievement</i>	<i>Coordination body</i>	<i>Duration (pers.month)</i>	<i>Cost (local currency)</i>
<input type="checkbox"/> Initiate a national campaign of awareness through posters, discussion groups within the health-care facilities, radios, etc... <input type="checkbox"/> Inventory the training needs for staff of health-care facilities. <input type="checkbox"/> Review the curricula and the pedagogy of the faculties of medicine, nursing and administrative schools to emphasise HCWM problems. <input type="checkbox"/> Form a group of trainers and train the trainers. <input type="checkbox"/> Train the medical and administrative staff of the health-care facilities. <input type="checkbox"/> Evaluate training and public education materials. <input type="checkbox"/> Provide funds to develop a surveillance programme on the number and consequences of accidental injuries due to inadequate manipulation of HCW.				

Key points

- Both awareness campaigns and training programmes should be regularly monitored to test their impact and if necessary adjust their content or means of transmission for maximum efficiency.
- Training should be « action » oriented and not just theoretical knowledge. Regular information and practice of current/new techniques should be given to all personnel concerned.

Timeframe and work plan to implement the National Action Plan

It is necessary to plan a timeframe for the implementation of the NAP. Five years is a realistic minimum period of time to observe the first changes. The table below provides you with an example based on the actions listed in the objectives discussed.

n°	Actions	Years				
		1	2	3	4	5
101 ³	Organise a national workshop to modify and validate the proposed National Action Plan	XX				
102	Establish the criteria for the evaluation of the NAP during its implementation Etc...	XX				
201	Conduct a national survey	XX				
202	Establish national directives defining the procedures of segregation, packaging, collection, transport, treatment and final disposal accordingly etc...		XXXX			
301	Etc...					

6 Additional information and references

- Examples of such a NAP can be found at: http://www.healthcarewaste.org/welcome.html?center_frame=cafrica.html .
- Further background information and tools can be found at www.healthcarewaste.org

³ 101 refers to Objective 1 - Action 1