



# **Report on Capacity Building at Provincial Level for improved Health Care Waste Management**

**June 2003**

This report gives recommendations for capacity building for the Provincial Government of Gauteng for improved health care waste management.

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## Abbreviations

ABET	Adult Basic Education and Training
CHC	Community Health Centre
CPD	Continuing Professional Development
DACEL	Department of Agriculture Conservation Environment and Land Affairs
DEAT	Department of Environmental Affairs and Tourism
DoH	Department of Health
EHPs	Environmental Health Practitioners
ETQA	Education and Training Quality Assurers
GALA	Gauteng Association for Local Authorities
GDoH	Gauteng Department of Health
GSSC	Government Shared Service Centre
HACCAP	Hazard Analysis Critical Control Point (Food safety programme)
HAZMAT	Hazard Material (safety data sheet)
HCRW	Health Care Risk Waste
HCW	Health Care Waste
HCWIS	Health Care Waste Information System
HCWM	Health Care Waste Management
ILO	Independent Labour Organisation
ISO	International Safety Organisation
IST	In Service Training
IWMSA	Institute of Waste Management of Southern Africa
KZN	KwaZulu-Natal
OHASA	Occupational Health and Safety Association
OH&S	Occupational Health and Safety
NADSAM	National Diploma in Safety Management
NOSA	National Occupational Safety Association
NSB	National Standards Bodies
NQF	National Qualifications Framework
PMT	Project Management Team
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SABS	South African Bureau of Standards
SACECS	South African Centre for Essential Community Service
SAQA	South African Qualifications Authority
SETA	Sector Education and Training Authority
SGB	Standard Generating Bodies
SHE	Safety Health and Environment

## INTRODUCTION

### Background

It is estimated that the total HCRW mass generated in Gauteng is estimated to be no greater than 1,175 tons per month. This is mainly generated by the approximately 600 “major” generators in the province. Approximately 9,700 “minor” generators produce the remaining 11% of HCRW. Major generators are private, public, military and mining hospitals, private and public clinics and blood transfusion services. Minor generators are laboratories, the pharmaceutical industry, private practitioners such as GPs and dentists, veterinary services, specialised institutions such as old age homes and private homes. Although private health care facilities are shown to consistently produce more HCRW per patient than public health care facilities, it is estimated that 50% of the HCRW generated in the province is from public health care facilities. The successful management of HCRW is dependent on the introduction of a comprehensive set of standards and procedures from cradle to grave that ensures that risk to health, safety and the environment are minimised.

A new improved health care waste management system cannot be introduced in Gauteng if there is insufficient human and financial and other capacity to implement and maintain the system. The background for this report is the policy document “*Addressing the Health Care Waste Problem in Gauteng: A Policy for Environmentally Sustainable Health Care Waste Management in Gauteng Province.*” This policy accepted by the Gauteng legislature and cabinet in November 2001 sets out the following vision for HCW management in the Province:

*“ To ensure that integrated, environmentally sustainable and occupationally safe HCW management be established in Gauteng; within the frames and principles of the National Waste Management Strategy (NWMS), and covering the full HCW stream.”<sup>1</sup>*

The policy document describes eight areas of need to attain the vision set out above. These are:

- *Environmental needs:* Emphasis on environmentally sound treatment and disposal of HCRW
- *Occupational health and safety concerns:* Affecting workers in health facilities, transporters and at treatment facilities. Also visitors to health facilities and the public who work and live around landfill sites.
- *Organisational needs:* Including registration, record keeping and reporting
- *Equipment and technical needs:* Related to the containerisation, transportation and final disposal of HCW

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<sup>1</sup> DACEL *Addressing the Health Care Waste Problems in Gauteng: A Policy for Environmentally Sustainable Health Care Waste Management in Gauteng Province.* October 2001

- *Financial needs:* The importance of achieving a balance between the standard of service to be rendered and the affordability thereof with the South African context.
- *Legislative needs:* Need to introduce appropriate legislation and effective enforcement especially with respect to emissions from treatment technologies, permitting for transporters and treatment facilities and a penalty system when there is under performance.
- *Training and awareness needs:* Especially in health care facilities but also off-site with the transporters and at the treatment facilities and for the general public.
- *Public health needs:* Concerned with the protection of public health through appropriate preventive actions such as correct segregation, safe containerisation of HCRW and reduced emissions from incinerators.

These needs are addressed through a programme of action facilitated by the Gauteng Sustainable Health Care Waste Management Project. This programme includes:

- The introduction of a *Health Care Waste Information System (HCWIS)* that will require transporters and treatment facilities to register and report the weight of HCRW they are disposing.
- The introduction of *HCW regulations* for Gauteng Province. These regulations will set standards for the cradle to grave management of HCRW in the Province. They will require all major generators of HCRW to register and submit Health Care Waste Management Plans. Treatment facilities are also expected to submit Waste Management Plans
- The preparation of new *HCRW tender specifications* for the Gauteng DoH. These will describe in detail an appropriate system of containerisation, transportation and disposal for HCRW in all provincial health facilities.
- The preparation of HCWM Guidelines for the Province that will set out acceptable standards for HCWM (cradle to grave) for all role players in both the private and public sectors
- The preparation of a HCW Management Strategy and Action Plan to sustain progress towards better HCWM for short- and medium term

The policy document details many areas for HCWM in the province that will benefit from a capacity building programme. For example minimum requirements in the policy document for awareness, information and training alone includes, the production of guidelines for health facilities, service providers and public enforcement officers, training for health professionals in HCWM, the production of training packages, curriculum changes for health care professionals and training for service providers and treatment facilities. Although all of the problems and needs identified in the policy document are important it is necessary to be strategic when addressing capacity development.

This report discusses capacity building in Gauteng Department of Health (GDoH) and local authorities. Although training and other support for service provider and treatment facility staff has been identified as important in the Gauteng Policy document it is not directly addressed here because it is thought that the combined presence of new

provincial regulations and the HCWIS will apply pressure on the industry to upgrade their standards and operate with greater accountability. Likewise the private health care sector is thought to be better capacitated to respond to new regulations that are likely to require health facilities to register and submit a Waste Management Plan.

The report written here addresses two areas for capacity building these are:

- The Gauteng Department of Health and the Department's capacity to implement and sustain an improved HCWM system introduced through the new HCRW tender from October 2003
- The role of local authorities in addressing the minor generators of HCRW.

### **Capacity building in GDoH and Service Providers servicing the Department**

Because the Gauteng Department of Health is estimated to generate almost 50% of HCRW generated in the province building their capacity to introduce and maintain an improved HCWM will make a major contribution to achieving the vision set out in the policy document above. This report specifically addresses what is needed in GDoH to support the introduction of the new HCRW tender at 28 hospitals and approximately 140 clinics. The recommendations are informed by the capacity building plan at the two pilot sites for the Gauteng Sustainable Health Care Waste Management Project. The report also briefly describes capacity in the service providers/transporters to support the DoH although there are no specific recommendations for service providers themselves. However the progress of the Gauteng Sustainable Health Care Waste Project and the recommendations at the end of this report do have obvious implications for the service providers. The new GDoH HCW Tender will require the service providers to recruit additional skills. This includes service provider staff that is able to advise and develop systems and solutions for particular types of wards, hospitals and waste streams as well as provide tailored training for different cadres of staff. The Gauteng HCW Regulations will require service providers to register. The report does not consider what is needed at the treatment facilities to support the DoH HCRW tender. This is because it is a less immediate interface with health facilities, although it is expected that there is overlap with issues facing the service providers. The tender is requiring one combined service provider that arranges for supply of durable and disposable equipment as well as collection and treatment of all HCRW collected. However, it is entirely up to the bidders to decide to either carry all of these tasks in-house or use one or several third parties to carry out some of these activities, for example, treatment, training and manufacturing of equipment.

### **Capacity building for local authorities**

Secondly this report discusses what is known about small generators of health care risk waste such as GPs, dentists, veterinary practices and pharmacies and the role of local authorities. Constitutionally provincial planning for environmental management and pollution control is a function of the provincial legislature. Cleansing, refuse removal and

solid waste disposal are described as a local government competence, while the role of provincial government is to monitor and support local government. In broad terms it can therefore be stated that constitutionally, HCW implementation is the function of local government, while planning for sustainable HCW management is the role of the province. The role of local authorities is in general an unaddressed gap in the present strategy for HCRW management in the province as a whole, despite there being a constitutional expectation. The report discusses the role of the Department of Environment, Conservation and Land Affairs (DACEL) to support improved management of health care waste in local authorities.

### **Sources of information**

This report draws information from a number of other studies by the Gauteng Sustainable Health Care Waste Project and does not intend to repeat the details or conclusions of these reports. These reports include:

- The Status Quo report, November 2000
- The Survey report for Leratong Hospital, May 2002
- The Survey report for Itireleng Clinic, May 2002
- The Draft Feasibility Report, September 2002
- The Leratong Hospital Waste Management Equipment Plan, November 2002
- The Leratong Hospital Code of Practise

Information for this report was collected through interviews with key informants in the Gauteng DoH, in the DoH Regions and other specialists working in the health sector, in DACEL and local authorities. Other information was collected from self administered questionnaires sent out to local authorities and service providers.

### **What is capacity building?**

Capacity building is much more than just training. Developments in capacity building consistently emphasize the importance of understanding the broader environment into which new training programmes are being introduced or the environments into which “capacitated” individuals are re-entering after training. This new approach to capacity building relies on a “systems’ audit to understand the wide range of factors that impact on capacity. For example, policy, organisational and institutional arrangements and the presence or not of incentives all can impact on capacity. For example, it is very difficult to enforce good segregation practices in a health facility that have been promoted in training if there is no policy or standard set from which to enforce the practice. This systems approach to capacity building emphasizes on the job performance and often relies on process led consultancy.

There are six critical areas for consideration in capacity building. These are structure, systems tools, skills and awareness, inter-relations, incentives and funding. Box 1 summarises these approaches and provides examples of the significance of each area for HCWM. Although this report does not rigorously unpack these areas for GDoH and local



authorities a wide range of important information is collected that is relevant to capacity building and which relates back to these critical areas.

### The structure of this report

The key stakeholders for capacity building discussed in this report are:

- The Integrated Waste Management Directorate of DACEL
- The fifteen local authorities in Gauteng
- The GDoH 28 public hospitals and approx. 21 community health centres (CHCs) and approx. 120 clinics represented specifically by the findings at two pilot sites for the Gauteng Sustainable Health Care Waste Management Project.
- The provincial and three regional GDoH structures

The first part of this report explores the major structural, external and internal organisational issues, policy, human resources and budgetary issues for each stakeholder as relevant to HCWM. The second part of the report explores training capacity in the province for HCWM. The third part of the report contains discussion and recommendations.

#### Box 1: Capacity building for HCWM

Components of the Proposed Capacity Building Approach	Areas for consideration	Examples of the relevance of this approach to HCWM
Structure	Institutional structures, organisation, management and staffing of stakeholders	<ul style="list-style-type: none"> <li>• The structure of the DoH, especially the role of relevant disciplines such as environmental health and OH&amp;S</li> <li>• Contract with service provider</li> </ul>
Systems tools	Equipment, procedures, guidelines, audit systems and legal instruments	<ul style="list-style-type: none"> <li>• Provincial policies for HCWM</li> <li>• Legislation and by-laws relevant to HCWM</li> </ul>
Skills and awareness	Needs assessment, provisions and facilitation, formats and approaches, institutional arrangements	<ul style="list-style-type: none"> <li>• Training provision in the DoH – formal and inservice training.</li> <li>• Availability of training materials</li> <li>• Training provision within the service providers</li> </ul>

		<ul style="list-style-type: none"> <li>• Health worker training in tertiary institutions.</li> </ul>
Inter-relations	Institutional relations, internal organisational issues	<ul style="list-style-type: none"> <li>• Relationship of occupational health and safety to HCWM</li> <li>• Role of committees in HCWM</li> <li>• Relationship of the regions to the provincial health department.</li> </ul>
Incentives	Aspects affecting system performance, penalties, cultural elements, other government policies e.g. Affirmative procurement and action etc	<ul style="list-style-type: none"> <li>• Use of incentives in the DoH for health worker individual performance.</li> <li>• Provincial competitions</li> <li>• Procedures and criteria for identifying preferred providers for training in the DoH.</li> </ul>
Funding	Pricing and cost, budgeting, release of funds and authority	<ul style="list-style-type: none"> <li>• Budget for training in HCWM</li> <li>• Budget for HCWM tender</li> <li>• Methods of billing for HCWM</li> </ul>

## **PART 1: STAKEHOLDERS FOR IMPROVED HCWM**

### **SECTION 1: DACEL AND LOCAL AUTHORITIES**

The discussion in this section focuses on:

- Developments in DACEL in relation to HCWM
- The understanding of local authorities about the management of small generators of HCRW

In this section DACEL and local authorities are discussed together because DACEL particularly sees a strategic role for DACEL in supporting development at this level.

#### **1.1 DACEL and HCWM**

DACEL plays an important strategic role in the management of HCW in the province. The present programme of change in HCWM is driven by DACEL. DACEL has facilitated the funding and establishment of the Gauteng Sustainable Health Care Waste Project. Important achievements by DACEL with the support of the Gauteng Sustainable Health Care Waste Management Project are:

- Cabinet endorsement of the HCW Strategy for Gauteng (Nov. 2001)
- Piloting of the Health Care Waste Information System (HCWIS) (ongoing)
- Preparation of “Gauteng Waste Information System Regulations” setting requirements for the registration and reporting on HCW generation from certain larger generators of HCRW (assumed to be promulgated second half of 2003)
- Preparation of “Gauteng Health Care Waste Management Regulations” setting detailed requirements for segregation, storage, containerisation, transportation and treatment of HCRW (assumed to be promulgated second half of 2003)
- Gauteng Strategy and Action Plan for HCW Management in the Province (Approx. October 2003)

All of these developments create an additional need for skills and capacity for managing HCW and should therefore affect the growth of capacity in the province because there will be greater regulation and reporting of HCW for the future. The regulations are likely to require the following actions:

- The registration of major HCW generators, service providers and treatment facilities and the submission of Waste Management Plans
- Specific responsibilities for local authorities with respect to small generators of HCW
- Specific responsibilities for DACEL in registering, issuing authorisations, managing and enforcing the Regulations
- The implementation of the HCWIS across the province
- Reporting from major generators of HCW about the management of HCW.

DACEL has also established a strong network of role players for HCW management. This has included role players in the public and private sectors and in national and provincial government. It has been a requirement of the Gauteng Sustainable Health Care Waste Project that a partnership be established with Gauteng DoH. Representatives from the DoH are active on the Project Management Group. Also there has been high level co-operation between the Head of Department for DACEL and the DoH on matters relating to HCW.

Representatives for the National DoH and from the Department of Environmental Affairs and Tourism (DEAT) are members of the Gauteng Project Steering Committee. DACEL has been involved in discussion with national departments about the development of national guidelines in the DoH for HCWM and the development of a donor funded programme in DEAT to address national priorities in HCWM.

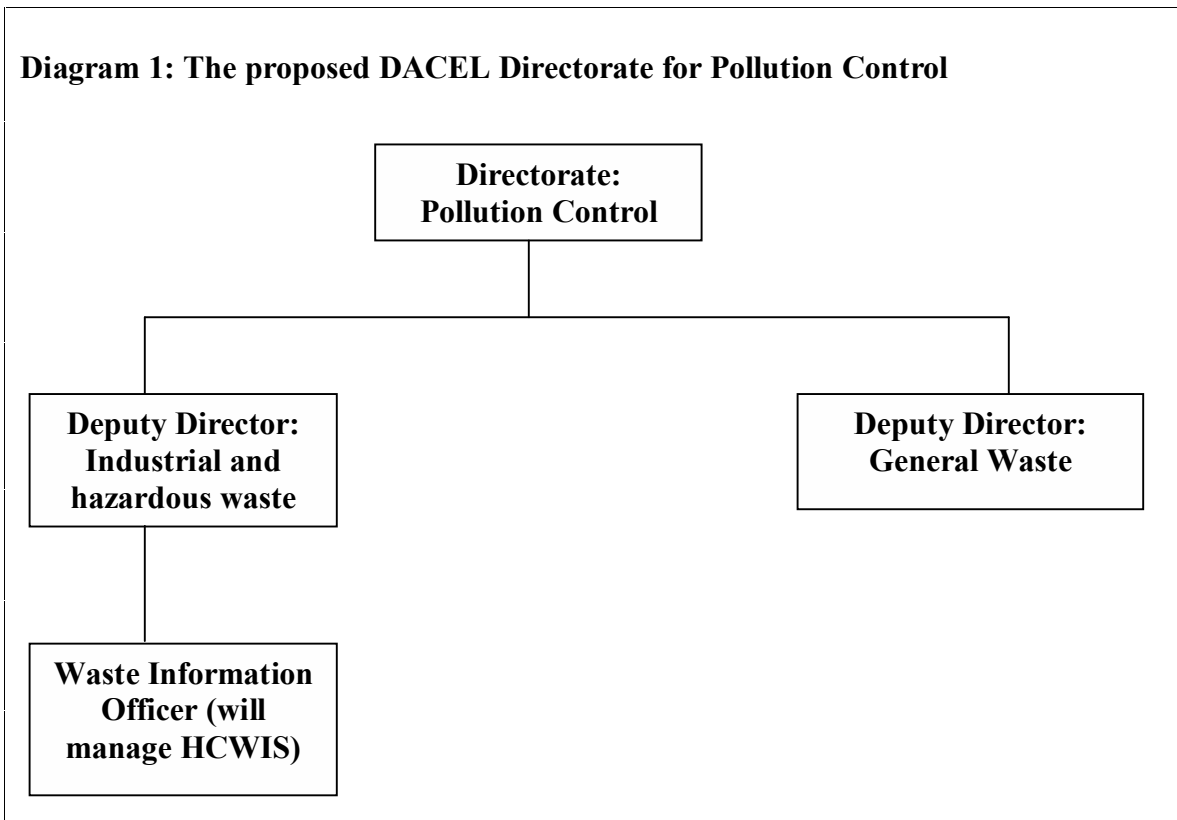
In relation to the private sector DACEL has convened a number of consultative meetings with stakeholders in the private sector representing both treatment sites and transporters of HCW. This has established a communication channel between DACEL and private waste contractors.

There has been less direct communication and consultation between DACEL and private health care industry including both the major and minor generators of HCW. DACEL has had no communication with minor generators of HCW in Gauteng but has a programme of developing guidelines for local governments to provide some guidance and capacity for local authorities with respect to HCW to commence in 2003.

## **1.2 Organisational Change for HCW in DACEL**

DACEL is in a period of reorganisation and proposes to create an additional Director's post. Waste management will fall under the Directorate for Pollution Control and is likely to be divided into two components; sub-directorate industrial and hazardous waste including HCW and sub-directorate general waste including waste minimisation, sewerage and local capacity.

A Waste Information Officer will be appointed with a background in information technology and environmental development. This person will be primarily responsible for the management of the HCWIS and will provide analysis of waste streams. It is expected that the proposed reorganisation and introduction of the HCWIS will strengthen DACEL's capacity to play a meaningful role in HCWM in the Province in the long term. This proposal is already integrated into strategic and operational plans for DACEL from 2003 including necessary budget allocation.



### 1.3 Strategic concerns for DACEL

The Gauteng Sustainable Health Care Waste Project is expected to complete its work in April 2004. DACEL proposes to strengthen its long term role in HCWM in the province by managing the HCWIS. However in the short term DACEL recognises that it is essential that public sector structures are capacitated to be in a position to respond to the DACEL HCW Management regulations.

DACEL is concerned that presently the small generators of HCW are not integrated into any comprehensive plan. At present it is thought that local authorities are not fulfilling their function in this regard and will need support to do so. The draft regulations require local government to provide a service for the safe collection and treatment of HCRW and to develop a plan to do so. DACEL wishes to support pilot projects that encourage local authorities to establish innovative systems to collect HCRW through pharmacies and other outlets.

DACEL wishes to ensure that the roll out of the improved HCWM system to Gauteng's public health facilities happens successfully in 2003, among others via the provincial tender for HCW Management. DACEL proposes the development of a roll out plan that will ensure that the Gauteng Sustainable Health Care Waste Management Project is able to offer GDoH sufficient support for this to happen. DACEL also wishes to consolidate their partnership with the DoH by extending the role of the Project Steering Committee

(PSC) for the waste project into the roll out period and by nominating a DACEL counterpart to participate in the GDoH HCWM committee. This on-going relationship would in particular assist the GDoH in the preparation of Waste Management Plans that are required in the regulations.

DACEL also recognise that it is important that developments in Gauteng are in keeping with developments within the national government. DACEL will continue to liaise with the National DoH and DEAT about progress in Gauteng and about the preparation of national guidelines for HCWM.

The revision of the SABS Code 0248 for *“Handling and disposal of waste materials within health care facilities”* is also an important development nationally which is reflected in the Gauteng Regulations.

#### **1.4 Local Authorities and the small generators of HCW**

There are fifteen local authorities in Gauteng Province and an estimated 9 700 minor generators of HCW. The Status Quo Report found that 11% of HCRW in the province comes from small generators of waste. This includes waste generated by general practitioners, dentists, local authority clinics, laboratories and veterinary services.

The management of waste in local authorities often straddles a number of different departments. “Solid Waste” is usually the department that provides a waste removal service, “Environmental Management” is concerned with planning and permitting in relation to waste management services and “Environmental Health” provides awareness and enforcement of standards. Therefore introducing changes to HCWM through local authorities will involve an inter-departmental plan and will be resource intensive.

The proposed DACEL regulations will almost certainly require that minor generators of HCRW register with local authorities. Although the Gauteng Health Care Waste Management Project has had some preliminary discussions with the Gauteng Association for Local Authorities (GALA) it clear that not much is known about the capacity issues in local authorities with respect to managing HCW. However, it is also apparent that the current uncontrolled disposal of HCRW, in particular infected syringes, in by GP’s and other medical practitioners, home care specialists, laboratories, tattoo artists etc. needs to be managed better at the local government level.

In preparation for this report each local authority in the province was asked to complete a questionnaire about the problems and procedures for handling small generators of HCRW in the province. Of the fifteen local authorities nine completed the questionnaire. The results quoted below are the compiled responses from the nine local authorities. The results give an indication of the issues in the Province rather than a definitive picture.

In general the results show that for many local authorities HCRW is not considered to be a significant problem. Although 30% of respondents did report that HCRW is not separated from general waste and is arriving as such at the landfill site. Other problems

that have been reported before in the Status Quo Report include illegal dumping of HCRW and burning or burying of HCRW in backyards. It was acknowledged by one respondent that there is no proper “*medical waste system*” in place. Most of the local authorities reported using national legislation and codes rather than local by-laws to respond to problems.

Most of the comments with regard to the improved management of medical waste concern the provision of effective guidelines, better training and communication for all stakeholders and informed enforcement of standards by EHPs. These comments are useful for DACEL because they indicate where local authorities need support. Three associations<sup>2</sup> representing the small generators of medical waste were asked to comment about whether they provide guidelines for their membership about the management of HCRW. None of the associations provide guidelines and expect either the local authority or appropriate legislation to inform generators of their responsibilities. This again underlines the importance of local authorities taking a pro-active approach to HCWM. The Veterinary Association report that they are in the process of developing a discussion document, as a consequence of a stakeholder workshop hosted by the Gauteng Sustainable Health Care Waste Management Project.

The associations felt that the main problem facing their members is the extremely high cost of removing HCRW because of the low volumes generated. The associations did not cite the illegal dumping, burning or burying of waste as a problem, which suggests that the associations may well be poorly informed about the mismanagement of HCRW.

### **1.5 Results from the local authority survey about the small generators of HCRW**

The information presented here was collated from completed questionnaires. The term medical waste appears because this is the generally used term in the health sector rather than HCRW.

#### **a. Problems experienced with medical waste (especially with small generators)**

- no major problems experienced (50%)
- medical waste not separated from general waste (30%)
- separation and storage not up to standard
- containerisation
- collection
- transportation
- disposal
- illegal dumping of medical waste, burning or burying in back yards
- no proper medical waste system in place

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<sup>2</sup> The Diabetic Association, The Dental Association and The Veterinary Association

**b. How problems are being dealt with**

- in terms of the Council's Solid Waste by-laws
- surveys done by Environmental Health Practitioners
- audits
- inspections
- education/letters
- notices
- follow-up visits or regular monitoring
- removal of illegally dumped HCW

**c. What policies or guidelines are being used?**

- 'Minimum Requirements for Waste Disposal by Landfill' and 'Minimum Requirements for Handling and Disposal of Hazardous Waste' – published by the Dept of Water Affairs and Forestry. This is a National policy document and is providing guidelines for the handling of waste nationally.
- SABS code 0248
- National Environmental Management Act 107 of 1998
- The White Paper on Pollution Control and Waste Management
- The Health Act 63 of 1977
- Health By-laws
- Environmental Conservation Act and the National Environmental Management Act

**d. Support needed to manage medical waste better**

- *financial support* to make use of companies to render medical waste removal service on behalf of the council
- *educational information* - leaflets
- better *communication* between medical waste companies and local authorities
- EHPs should be made more aware and need to take responsibility for ensuring the collection and disposal and need to be equipped to be the accountable officer
- effective *co-ordination, training and awareness programmes* within both the private and the public sector
- effective *planning and law enforcement guidelines*
- *development and publication of HCW management guidelines*
- better *cooperation* between national, provincial and local government – responsibilities must be defined
- *training and awareness campaigns* for generators of medical waste



## **SECTION 2: HCWM IN GAUTENG PUBLIC HEALTH FACILITIES AND THE RECOMMENDATIONS FOR AN IMPROVED SYSTEM FROM THE PILOT SITES**

The discussion in this section focuses on three main areas:

- Problems with HCWM in public health facilities in Gauteng
- Recommendations from the pilot sites for capacity building
- Recommendations from the pilot sites for improved equipment for testing

### **2.1 Problems with HCWM in health facilities across the province**

It is not the purpose of this report to provide details of the problems of health care waste in Gauteng. These problems have been extensively discussed in other documents referred to in the introduction.

However the seriousness of the present poor management of HCW in the public as well as the private sector is documented by numerous incidents and problems throughout the public and private health care sector in Gauteng. For example, the general waste at Chris Hani Baragwanath is “resorted” to take out the health care risk waste before it can be taken to the landfill site. Such a practice is hugely inappropriate and presents serious health and safety risks. Poor segregation of waste is a massive problem across all provincial health facilities and there is little awareness of the extent of unnecessary costs of HCRW removal that are incurred because of such poor segregation. A Composition Study undertaken by the Gauteng Health Care Waste Management Projects has documented that approximately 30% of the medical waste removed from public facilities and approximately 22% of the medical waste removed from private facilities is indeed domestic waste that could be disposed of to local landfills at a fraction of the current costs.

Representatives of the provincial GDoH HCWM committee convened by the Provincial Assistant Director for Environmental Health identified the following major problems across the province in public health facilities:

- Inadequate provision of enough colour coded liners by the DoH
- Internal transportation of waste in health institutions is inadequate due to lack of trolleys or similar
- Stockpiling of equipment such as the cardboard boxes used for HCRW in health institutions
- Poor standard of service to clinics by the service provider and absence of proper service delivery requirements in past HCW management tenders
- Service provider only supplies equipment and collection service –Service provider should offer a wider support service to health facilities.
- Staff are not trained in HCW Management in health facilities
- No training provision for HCWM in the province

- Health facility, Regional and Provincial senior management staff are not sufficiently involved in HCWM
- Poor quality of containers for HCRW
- No provincial policy for the disposal of expired drugs.

In addition there is no comprehensive list of health facilities that are presently serviced by the service providers in the province. Although it is known that many health facilities in the province have poor HCWM standards it is not known which hospitals and clinics have the greatest need for support with waste management. This type of assessment is essential to plan a programme of roll out for an improved HCWM system and support to health institutions for the future.

## **2.2 The present HCRW service provider for public health facilities**

The present service provider for HCRW in four of the five former health regions in the province is Buhle Waste. PhambiliWasteman services the fifth region. The service providers provide cardboard boxes with a red liner, sharps containers and specicans. Although the boxes are designed to carry a maximum of 15 kg, if filled with wet waste the boxes become much heavier. The present service agreement does not include any training provision or consultancy support. The total service is paid for per box or unit. Each cardboard box bought by the DoH includes payment for the collection and disposal of waste. Poor segregation of waste therefore costs the DoH a great deal of money as does loss or damage to cardboard boxes, sharps containers and specicans before collection. Stockpiling of cardboard boxes or alternative uses for cardboard boxes in health facilities also costs the DoH money. All HCRW is currently taken for incineration at a number of sites including Sanumed (Roodepoort) and an incinerator in Klerksdorp (North West Province). General waste is collected by the local municipality or by private waste contractors for disposal at the landfill site.

## **2.3 Findings from the pilot site surveys of relevance to capacity building**

Comprehensive surveys have been conducted at two public pilot health facilities in Gauteng. Leratong hospital is a 700 bed hospital in the West Rand and Itireleng clinic in Dobsonville, Soweto, has 8000 outpatients a month and a 24 hour midwife obstetric unit. These surveys integrated the hard and soft aspects of the present HCWM system. The surveys included a systems analysis, an audit of equipment, needs analysis and focus groups discussions with key cadre of health workers involved in the present HCWM system. The critical conclusions of these surveys with relevance to capacity building are:

- There is no management system to support HCWM in health facilities in the province. Consequently there is no hospital and clinic level policy, no properly delegated roles and responsibilities, very poor supervision and enforcement of standards, poor incident reporting and investigation.
- There is no dedicated staff for HCWM in health institutions. Infection control assumes responsibility for HCWM at Leratong. The safety representative/professional nurse has delegated responsibilities for waste at Itireleng clinic.

- The occupational health and safety committee functions at a low level in the hospital hierarchy at Leratong and appears not to be fully functional as intended. At the clinic the occupational health and safety committee is not fully operational. Neither committees play an adequate role in HCWM and the OHS Committees do not appear to function as laid out in the OHS Act.
- Procurement of additional liners and PPE is done through the administrative arm of the DoH either at an institutional or regional level. There is no integration of this function with the operation of the system. Breakdowns do occur in the HCWM system because of changes in provisioning practice or change of suppliers. Also breakdowns occur because of a problem between the procurement department and regional and hospital stores.
- Stockpiling of liners and containers for HCRW is normal practice in hospital units and wards because of recurring problems with procurement and distribution of supplies throughout the hospital.
- Some knowledge training is conducted by the service provider at Leratong in collaboration with the infection control staff and the Personnel Development Department without such training or the scope of training being described in the present service agreements. Training is targeted at general assistants and nursing staff. Doctors are not included in training. There is no training provision for clinics on HCWM either by the service provider or in the DoH.
- The knowledge levels of health workers about segregation of waste appear improved by training offered by the service provider at Leratong. The knowledge levels are better down the traditional hierarchy. Doctors at Leratong had the least understanding of the present HCWM system and felt they had no role in the management or maintenance of the system. General assistants have the best understanding of the system including the importance of segregation and how to segregate waste properly. At Itireleng Clinic health workers were unsure about the correct segregation of waste.
- The inadequate provision of PPE makes workers feel unappreciated and unimportant.
- General assistants often feel blamed for mistakes that happen with waste. As do auxiliary and enrolled nurses. Roles and responsibilities are not clearly designated; therefore workers often pass the buck when mistakes happen. Generally workers feel unappreciated and there is no system of positive feedback and merit.
- The low moral and poor job performance of health workers for reasons beyond the HCWM system does impact on poor waste segregation practices.

#### **2.4 Recommendations for capacity building in public health facilities arising from the pilot site reports**

A number of recommendations were made in the pilot site reports that are critical for approaches to capacity building in public health facilities in the province. These are:

- A new management system to support the correct use of equipment and related training should be multidisciplinary to build improved communication and problem solving between different categories of workers.

- The introduction of a designated Health Care Waste Officer in all health facilities and an Assistant in all larger facilities. These people will be responsible for the facilitation of improvements in the HCWM system.
- The service provider should be given more responsibility for HCWM in future service agreements. It is the conclusion of the pilot site consultants that public health facilities are poorly serviced by the present contract specifications entered into with existing service providers. Service providers should in future agreements be contracted to offer training, a consultancy service and provide all the equipment necessary to run the HCWM system to all their client facilities. Dedicated service provider staff for larger facilities and to service clusters of clinics is essential. This will aid the resource restricted institutions to adapt the HCWM system over time to better meet their specific needs. A dedicated service provider consultant should also ensure that training happens in each health facility in their area. A new contract for service providers should include training hours and categories of workers to be trained. It is also felt that it is difficult to ensure the smooth operation of the HCWM system when essential equipment is provided from two sources. A common criticism of the present system is that colour coded liners are not available. Red liners are procured through the service providers whereas black liners are procured via the DoH general procurement system. It is therefore a recommendation of the pilot site consultants that the service provider be responsible for the provision of all equipment including both black and red liners and possibly personal protective equipment (PPE).
- The correct segregation of waste is dependent on the correct location of containers at the point of generation. This means it is essential to address the disposal of general waste at the point of generation. The Survey Reports found that there are insufficient general waste containers or that containers are in urgent need of replacement.
- Supervisory staff from the cleaning, medical and other non-medical departments can conduct on- the- job- training and performance monitoring. Therefore training for all categories of workers can be done on the job by their supervisors. Supervisors can be introduced to teaching materials and essential information through train the trainer workshops at a facility level organised by the health care waste officer or service providers.
- The introduction of new equipment should be accompanied by the introduction of new policies and procedures. This must include facility level policy, standards and procedures, roles and responsibilities for all staff, the introduction of a designated Health Care Waste Officer and Assistant, strengthened supervision practice, monitoring and reporting. All of this will be collated in a “Code of Practice” booklet for health facilities. Monitoring and reporting will complement the role and functions of the occupational health and safety committee. This is a critical component of capacity building. Failure to introduce a better management practice will result in all the problems of the old system being imported into the new system.

## **2.5 Improved HCW equipment for testing at Leratong and Itireleng**

To achieve better segregation of waste and improved HCWM it is essential that capacity is developed in relation to a well chosen user friendly equipment system. At the time of

writing the following developments have happened at Leratong Hospital and Itireleng Clinic with regard to the improved equipment for testing. Overall it hasn't been an easy process identifying new equipment to test, because the problems with the existing cardboard boxes have been largely about how they are used rather than the boxes themselves. However the hospital and clinic have decided to respect the findings of the feasibility study that concluded that reusable containers are more environmentally friendly and cost effective than the present system of cardboard boxes.

The principles of the new system for testing are:

- Safer by eliminating where possible existing occupational health and safety risk
- Designed to promote better at-source segregation primarily by ensuring better placement of receptacles
- Environmentally friendly by eliminating cardboard boxes and using reusable containers based on an assessment of life-cycle impacts caused by various containerisation options
- Affordable to the DoH
- That there is sufficient capacity in health facilities to implement and manage the improved system.

The hospital and the clinic will test two equipment choices. The recommendations for the new system are:

- Strict colour coding through use of red and black liners only
- Standardised bins, boxes and stands for waste collection with well fitting liners
- Horizontal loading sharps containers
- Internal transportation of lined reusable plastic boxes in a cage trolley or 770 litre wheelie bin to central storage
- Secured central storage area
- Use of 770 litre wheelie bins and a cage trolley for reusable boxes for transportation off site for treatment and disposal
- Cleaned and sanitised 100 litre and 50l litre boxes and 770 litre wheelie bins returned to hospital and clinic for reuse
- Mechanised tailgate for service provider truck to reduce manual handling and reduce loading and unloading time
- Weighing of waste at health facilities and at the treatment facility.

## **SECTION 3: ORGANISATIONAL CHANGE AND CAPACITY IN GAUTENG DEPARTMENT OF HEALTH FOR HCWM**

This section discusses the following areas:

- What is the present strategy and priorities for the GDoH and its relevance for HCWM
- Capacity for HCWM in provincial occupational health and environmental health services
- The role of the Provincial DoH in aspects of the present HCWM system.

### **3.1 Developments in the Department of Health**

Gauteng is divided into three health regions, A, B and C. Each region is comprised of two districts. The overall policy thrust of the DoH is to establish district health systems coterminous with local authorities. In Gauteng there are three metropolitan councils and three district councils. The metropolitan municipalities are Johannesburg, Tshwane and Ekurhuleni.

The district health system is the core management level for the primary health care service. It is through the district health system that services are made accessible to communities and respond to priority needs. Also the primary health care package is an integrated programme of curative, preventative and promotive health activities. Therefore the environmental health service, PHC clinic services, community health services including midwife obstetric services and smaller district hospitals should be all managed at this level.

Clinics, community health services and smaller district hospitals report to regional structures. The role of the region is to facilitate district development, but it is envisaged that in the long term the regional management level will fall away once the district health services are fully devolved to local governments. Larger hospitals will be managed by the province. For the future there will only be provincial and district levels of health service management.

There are 28 provincial hospitals in Gauteng, approximately 21 community health centres and approximately 120 smaller provincial clinics including satellite and mobile services. Local authorities also have clinic services, some laboratory capacity and are the primary employer of EHPs. However the new HCRW tender will only be for provincial health facilities and will not affect local authority facilities directly. However, it is recommended that local governments let their future tendering for HCRW services be informed by the provincial tender specification and the increased level of service delivery that will be achieved via those tenders.

*Provincial Priorities*

The present provincial health service priorities are divided into three areas, health outcomes, providing better health services and securing value for money. Box 2 summarises these priorities. Provincial priorities guide resource allocation, establishment of special projects and human resource development. In general it would appear that the HCWM project best meets provincial priorities by contributing to the reduction of needle stick injuries and therefore potential HIV and hepatitis infections in the workplace through better containerisation and strengthening institutional capacity by the promotion of better monitoring and reporting.

**Box 2: Gauteng Department of Health Provincial Priorities**

<b>Health outcomes</b>	<b>Better health services</b>	<b>Value for money</b>
<ul style="list-style-type: none"> <li>• Mother and child</li> <li>• HIV/AIDS</li> <li>• Major communicable diseases</li> <li>• Trauma and violence</li> <li>• Major non-communicable diseases</li> </ul>	<ul style="list-style-type: none"> <li>• Primary health care</li> <li>• Emergency services</li> <li>• Hospital services</li> <li>• HIV/AIDS</li> <li>• Quality and client satisfaction</li> </ul>	<ul style="list-style-type: none"> <li>• Strengthening institutional capacity</li> <li>• Improve planning</li> <li>• Communication</li> <li>• Health information</li> <li>• Monitoring</li> <li>• Stakeholders</li> </ul>

*Devolution of services to districts*

Full devolution of the present regional services to local authorities is being negotiated and is unlikely to happen for several years. Johannesburg Metropolitan Municipality will be the pilot authority for Gauteng province. A “Memorandum of Understanding” has been signed between the respective authorities and it is likely that the first phase of negotiation will involve the “delegation” of functions rather than full devolution of services to local authorities.

There are three phases for the planned decentralisation to the districts. The first phase will start from July 2002 and will only affect clinic services. The second phase will be community health centres that include health facilities servicing approximately 8000 patients a month or offering 24 hour services such as at Itireleng and the third phase will affect district hospitals.

Once this does happen the province as stated before will manage larger hospital services, monitor equity and standards across the province, provides specialist services and budget to the districts. Overall it would be expected that in relation to health care waste the province would hope to be better equipped to advise districts and thus provide standards for HCWM across the province both in provincial hospitals and in district health services.

### 3.2 Capacity in occupational health and safety and environmental health

Occupational health and safety and environmental health are the two disciplines within the Gauteng Department of Health that are most directly concerned with health care waste management. The involvement of these two sections is vital if the new HCWM system is to be better coordinated at a central level.

#### *Environmental health*

There are approximately 400 environmental health practitioners (EHPs) in Gauteng Province almost all of these are employed by local authorities. There are only 14 EHPs in total for the province and in the three regions. The provincial representative is Albert Marumo who is an Assistant Director in the Public Health Directorate. At the regional level there are other Assistant Directors for Environmental and Occupational Health. In general it is fair to assume that the capacity in Environmental Health is weak in terms of both the number of qualified staff working for the DoH and in the level of functioning of Environmental Health in the provincial hierarchy.

The relevant statutory and other functions of environmental health are summarised for each level of health service management in Box 3.

#### **Box 3: Environmental statutory and other functions related to HCWM**

<b>Province</b>	<b>Region</b>	<b>Local authority</b>
<ul style="list-style-type: none"> <li>• Monitoring aspects of the enforcement of the Hazardous Substance Act No15 of 1973</li> <li>• Draft &amp; monitor protocols, norms and standards on environmental health</li> <li>• Review audit of inspections of hospitals</li> <li>• Analysis &amp; interpretation of collated data</li> <li>• Facilitate training of EHOs in disaster management</li> <li>• Draft protocols for spillage of hazardous waste</li> </ul>	<ul style="list-style-type: none"> <li>• Enforcement of the Hazardous Substance Act No 15 of 1973</li> <li>• Application of provincial protocols, norms and standards</li> <li>• Collection of environmental health data</li> <li>• Selection of EHOs for training in disaster management</li> <li>• Monitor implementation of protocols for spillage of hazardous waste</li> </ul>	<ul style="list-style-type: none"> <li>• Implementation of provincial protocols, norms and standards</li> <li>• Compilation of environmental health data</li> <li>• Implement disaster management at local level</li> <li>• Implement protocols for spillage of hazardous waste</li> </ul>



Albert Marumo facilitates the setting up of some environmental health training in the province. The training programme for this year is:

- HACCAP – a food safety and monitoring system
- The hazardous substances act – for regional staff only
- Food irradiation.

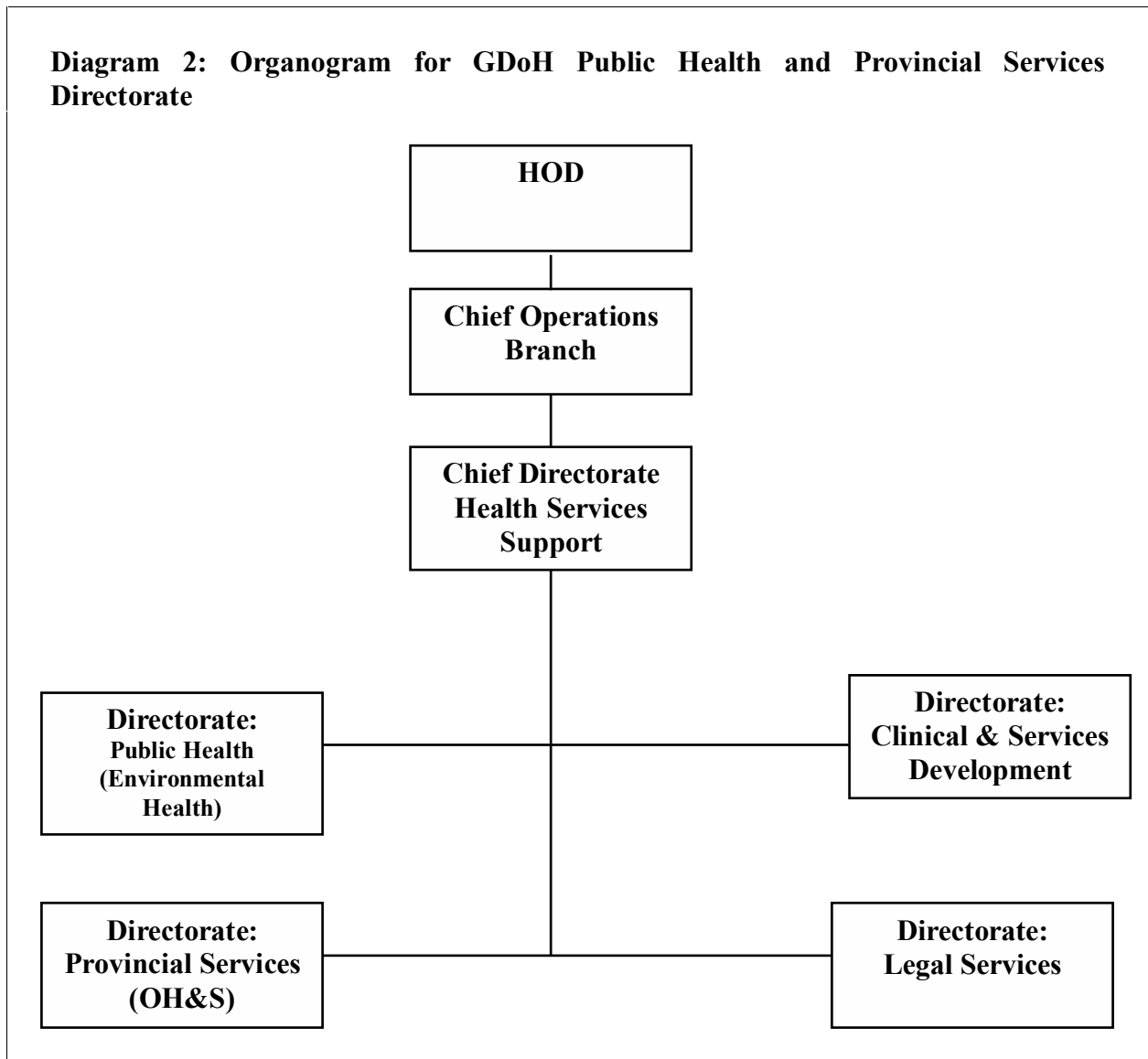
HCWM is not considered a provincial training priority.

There is no systematic monitoring or reporting of any environmental health priority in the province. Although there are some experienced EHPs working in the Regions who are conducting inspections in hospitals this information is not systematically collated at the province and there is no evidence that the information is even collected by the province. This is despite inspections and review audits in hospitals being a statutory function at the provincial level (Refer to Box 3).

National environmental health policy is only available in draft and there is no provincial policy. An incomplete copy of the national policy available in the province described key interventions in relation to HCWM to include integrated pollution control and waste management. There are no specified functions for EHPs in relation to health care waste in this document. In general there is a shift in environmental health away from inspection to prevention and development work. EHPs are now expected to be able to conduct environmental impact assessments, although many EHPs do not have the training and background to do this.

The main contribution of Environmental Health to HCWM in the province is the provincial HCWM committee convened by environmental health that draws together representatives from the regions and hospitals. The committee meets monthly and reviews problems and developments in the province in HCWM. EHPs, infection control nurses and occupational health and safety representatives participate in this committee. Albert Marumo chairs the committee.

**Diagram 2: Organogram for GDoH Public Health and Provincial Services Directorate**



*Occupational health and safety*

The provincial representative for occupational health and safety (OH&S) is Vukani Khoza who is a Deputy Director in the Provincial Services Directorate. He broadly acknowledges that HCWM is a function of OH&S provincially but sees his primary goal to decentralise occupational health and safety to a facility level where the CEOs take full responsibility.

At present the occupational health service in the province is considered to be extremely limited. Most health facilities have no dedicated occupational health and safety staff. Health and safety representatives are nominated in all institutions because of legislation (Occupational Health and Safety Act no.85 of 1993). This Act requires that an OH&S representative is elected once there are more than 20 people in the workplace. In general

one health and safety representative is required for every 50 employees. Once an institution or organisation has two representatives they are then required to establish an OH&S committee. It can be expected that many provincial health facilities should have an OH&S committee.

The Act emphasizes the importance of OH&S management systems within a system of checks and controls to minimise risks and the importance of team work. The impression given by OH&S in the province is that many OH&S committees formed in health facilities operate with a limited degree of effectiveness. This was borne out at the pilot sites. At Leratong the OH&S committee meets regularly and reports monthly to hospital management, but presently does not report on the HCWM in the hospital, which should form an integrated component of OH&S in a health care setting. Also a conclusion of the Leratong survey report was that the OH&S committee operates at a level that is too low in the hospital hierarchy and does not include the active participation of senior management. At Itireleng there are safety representatives but no operational health and safety committee although legislation requires one.

At the regional level there are “occupational health and environment” co-ordinators who are able to take up regional concerns and facilitate health and safety representative training and who are mainly EHPs referred to in the previous section. These people are usually the vehicle through which the province communicates with the districts and with health facilities. Some local authorities have OH&S structures, but these are not integrated into provincial plans.

The present status of the undated OH&S policy drafted by Ferreira for the Gauteng DoH is unclear. Mr Khoza made no reference to the policy and said the province still needs to draft a provincial policy. However this policy was made available to consultants at Leratong Hospital. This is an example of the policy confusion that can exist in the GDoH

The Ferreira OH&S policy acknowledges in the preface that capacity and performance in OH&S is weak in the province. In this policy it is envisaged that a health district should have a “district occupational health co-ordinator.” There is no description in this policy of what should happen in health facilities. Instead it is stated that managers of health facilities do not understand the necessity of OH&S programmes.

#### *Capacity building in occupational health and safety*

There are a number of initiatives in occupational health and safety in the province to try and build capacity. These are:

- A pilot project to establish effective OH&S committees and management systems at 3 hospitals in the province; Thambo Memorial, Kalafong and Pretoria West This initiative is facilitated by an independent consultant for the DoH.
- A recommendation to the Chief Director for Resource Management in Gauteng DoH that 1 full-time Safety Officer and Occupational Health Nurse should be appointed for every 2000 employees.

- A draft tender to establish OH&S systems in other hospitals as a roll out of the pilot project. This tender provides for a forum of consultants to service Gauteng health facilities. It is thought that organisations such as National Occupational Safety Association (NOSA) will be part of the forum and that there should be some standardisation of management systems across the province. (Refer to the paragraph 3.4) However it is unlikely in the short term that this would include going for full NOSA accreditation. This development has exciting implications for the HCWM project because better OH&S management practice provides the basis for a better management system for HCWM.

The provincial OH&S programme is closely involved with the GDoH HIV/AIDS workplace programme that is being driven in health facilities through infection control nursing staff.

### **3.3 Regional Environmental Health and OH&S Practitioners**

As stated earlier EHPs are employed as “Environmental Health and OH&S” Co-ordinators by the Regions. These co-ordinators have wide ranging responsibilities including outbreak control. Of the five regional practitioners who were asked to complete questionnaires about their role in HCWM three responded to the request for information. All of these EHPs reported that they had completed audits of hospitals in their areas and a survey of provincial clinics. The Regional EHPs show from their responses a wide experience of the problems and provide ideas for support needed to improve the situation. They report using the Health Act and Infection Control “guidelines” for standards against which to audit. It is interesting to contrast this with the responses from local authorities on page 16 of this report. Local authorities listed a much broader range of relevant legislation. However it also highlights the need for a more definitive set of regulations/guidelines for HCWM.

#### **Responses from Regional EHPs**

The following are problems and solutions identified by the regional practitioners. Their comments are largely borne out by the findings of the Survey Reports at the pilot sites and emphasize the importance of policy, training, procurement of equipment and dedicated staff. They also report problems with the small generators of waste who illegally dispose of waste and that larger health facilities often have inadequate central storage areas for HCRW. This is an area that will need urgent attention with regard to the rollout of an improved system across the province. As with early collated information the term medical waste is used for HCRW. The comment also refers to the importance of appointing provincial and health facility staff with specific responsibility for HCWM.

#### **Problems in the GDoH regions with regards to medical waste**

- lack of protocols and standards for HCWM

- lack of commitment to protocols regarding medical waste management (although no documented protocols were provided for this review)
- systems in place, but protocols not followed
- no policy on medical waste
- no proper monitoring/control or checking mechanism
- lack of knowledge about medical waste
- insufficient training amongst health personnel and general assistants
- lack of communication amongst relevant stakeholders
- small generators sometimes burn small amounts of medical waste (eg. rural clinics, mobile clinics, old age homes etc.)
- training a problem due to the fact that staff rotate and resign before training can take place
- problems with tender procedures:
  - contracts not always clear
  - clinics and hospitals should appoint someone to be part of the process
  - province responsible for contract but procurement at a health facility level and at a regional level not always trained in contract requirements
  - difficult to determine if the service that is paid for is the service that is actually rendered because it is not possible to check inside the sealed boxes
- home nurses and other home care providers transport medical waste in the boot of their car
- no proper storage facility at hospitals and clinics
- not using correct containers at hospitals and clinics
- no dedicated person for waste management
- private medical practitioners for example GPs dispose of medical waste in the following ways:
  - with domestic waste
  - back yard incineration
  - take home for disposal/bury in garden
  - dispose off at a dumping site in black bags.
- lack of sufficient facilities available for the disposal of medical waste by small generators.

The suggestions for change can be categorised in the following broad areas: communication and training, policy, equipment, roles and responsibilities and reporting.

### **Support needed to address and improve the management of medical waste, general comments and suggestions**

#### Communication and training

- better communication amongst stakeholders
- training material to do education
- awareness campaigns necessary for management and lower level workers (cleaners etc)
- training for management on purchasing, stock-checking etc

- competitions between facilities should be encouraged
- cleaners must understand their occupational health and safety rights – also with regards to medical waste

Policy:

- Drafting of policy or guidelines regarding medical waste
- A specific guideline to be developed for the handling of legal issues in conjunction with DACEL and Water Affairs – to spell out everybody’s role and to stipulate which legislation a stakeholder can act upon.
- Medical practitioners to sign a pledge that they will adhere to the principles of occupational hygiene

Equipment:

- Research regarding new technologies is essential. E.g. experience with incinerators equipped with advanced flue gas cleaning in Gauteng, experience with steam sterilisation in KwaZulu Natal and experience with electro-thermal deactivation treatment in Western Cape and Gauteng.
- Need to strengthen the disposal of human tissue – E.g. placenta’s are sometimes stolen for traditional medicine making
- Development of South African manufactured modern sharps containers and other receptacles for HCRW as today there is no or very limited local manufacturing of sharps containers and other receptacles, e.g. for pathological waste, that would meet usual international specifications and requirements.

Roles and responsibilities:

- Outbreak response coordinators should also take on responsibility for HCWM at the regional level
- Waste management at local authority also plays a part in the monitoring of hazardous waste disposal
- A specific person should be made responsible for medical waste at facility level: i.e, a Health Care Waste Management Officer or full time OH&S staff
- A specific person should be made responsible for HCW at the provincial level, i.e. a Health Care Waste Management Specialist, as a minimum for an interim period of 2-3 years during the implementation of the new tender and the establishment of reporting and monitoring procedures or OH&S provincial staff.

Reporting:

- Records of medical waste should be kept at clinics to be able to monitor the product and amount of medical waste handled
- Feedback reports and reporting of backlogs important in the case of service providers

### **3.4 Auditing and management systems for quality, environmental, safety and health in health facilities**

The GDoH is concerned with how to measure and ensure quality in all aspects of service delivery. Although GDoH has neither formally nor informally adopted any quality, environment, safety and health management system, such systems have been used

successfully in the private sector and in public hospitals in other provinces. There are four systems that can be applied in health care settings and have had some consideration in the GDoH in the past. These are:

- Occupational Health and Safety Association (OHASA) 18 000
- Accreditation
- National Occupational Safety Association – Safety Health and Environment (NOSA-SHE)
- International Safety Organisation (ISO) 14 000

In addition, the Independent Labour Organisation (ILO) has also recently released a new system.

The importance of the above quality assurance systems is that they all integrate the management of different components including waste in health care settings in a comprehensive manner through the application of standards for quality, environment, safety and the protection of workplace health. These systems all describe policy and procedures that protect the environment, health and safety and set standards from which an audit can be conducted. It is impossible to set up a system for waste management in a health facility that doesn't include important aspects of OH&S practice in particular.

All the systems have a slightly different emphasis. The ISO 14 000 system emphasizes environmental impacts and accreditation emphasizes quality assurance through nursing standards for patient care. Accreditation has been implemented in Durban hospitals. The NOSA system has the most detail about waste management. The NOSA system also has a merit system and star ratings that are awarded to health institutions on attaining set standards.

The implementation of any comprehensive management system to support health care waste management will inevitably involve the adoption of one of the above systems or a modification of one of the above if you are to avoid reinventing the wheel. The NOSA system focuses on the role of the OH&S committee and development of institutional capacity to ensure occupational health and safety through the development of the role of a dedicated staff member. This is usually a full time environment, health and safety representative. The strength of the NOSA system is that it builds the capacity of an OH&S committee, a legislated body that should be operational in medium and bigger sized health facilities. The present training documentation for health and safety representatives in the DoH refers to the NOSA System.

The implementation of a quality assurance/OH&S system in health facilities would be a huge contribution to capacity building at an institutional level for HCWM if it were to happen. This is because this would ensure the introduction of policies and procedures, ongoing monitoring and external auditing. However the implementation of the full NOSA system takes almost two years and the cost of implementing the system is estimated to be R 400,000.00 over two years per hospital.

The strength of commissioning a body like NOSA is that NOSA has facilitators, trainers and auditors to support the implementation of their system. It is the opinion of OH&S in Gauteng DoH that the tendering processes and budget limitations do not allow for the DoH to work with one organisation such as NOSA only. Hence, the GDoH decision to establish a consultant's forum. However in the interest of good health and safety and to ensure sustained capacity for a long-term programme it is not clear to the author of this report whether this is the most appropriate strategy.

### **3.5 Incentives and HCWM in GDoH**

There are no financial incentive schemes in the DoH for individual workers. The only incentive scheme is the Khanyisa Awards which does provide financial rewards for health facilities. This award is conducted on a provincial level. The Leratong pilot site has won the award for their cleaning department. There is no award related to waste management per se. Sometimes the Regions have smaller competitions where they award certificates. For the future the service provider and/or hospital management could run competitions between wards to reward good practice. The survey reports at the pilot sites found a management system build on a system of positive feedback and merit could provide a non-financial incentive. A general assistant at Leratong said during a focus group discussions,

*"I wish we could be acknowledged and appreciated daily. All we get are the Khanyisa Awards twice a year. What about day by day? If someone could just say, "thank you." There is a high shortage of workers and we work hard without being appreciated."*<sup>3</sup>

At the pilot sites it was indicated in the findings of the survey reports that better provision of PPE especially gloves would help workers feel appreciated.

### **3.6 The HCWM budget in the GDoH**

The present budget for HCWM in the DoH is estimated at R20-30 million per year. Due to the lack of monitoring of costs for HCW services and the inconsistent use of budget codes by various facilities resulting in some costs being accounted for under items such as paper towels, general maintenance etc. it has not been possible to get accurate data on the actual all-inclusive costs of HCW Management for the Department of Health. The feasibility study concluded that continued use of the cardboard boxes is both expensive and environmentally unfriendly compared to the use of reusable containers.

It is estimated in the Feasibility Study that the current average monthly cost of HCW Management by the DoH (all-inclusive) is in the range of R 1.81 million. The new systems using reusable containers is estimated in the feasibility study to cost R 2.07-2.41 million (based on 240 litre wheelie bins), R 1.82-1.89 (based on 770 litre wheelie bins) and R 2.10-2.17 (based on stackable boxes). Hence, the estimated cost of the new system is expected to be similar to the current costs but with a considerably improved service level. However, in addition to the estimated costs above will come additional costs of

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<sup>3</sup> DACEL Survey Report Leratong Hospital 2002 Gauteng Sustainable Health Care Waste Project p76



training to be provided by the service providers as well as the in-house training to be conducted by the facilities and the department in general. Depending on the success of the training provided and particularly the success in improving the rate of segregation it may actually be possible to achieve even over overall costs after implementation of the new system. This is because it is documented by physical sorting that between 22-30% of the waste currently being disposed of as HCRW is indeed general waste that could be disposed via the domestic waste stream at a significantly lower rate. It appears that a long-term and very concerted effort at Leratong Hospital was able to reduce the level of domestic waste in the medical waste containers from 22% to approx. 10%. This translates directly into a 12% reduction of costs.

Compared to the current system the additional costs caused by the new system may include the following:

- training and awareness activities
- consultancy support to health facilities
- environmentally acceptable treatment procedures that cost more than the present incineration standards
- Additional general and risk waste containers for use at the point of generation to address the gradual depletion of general waste receptacles experienced caused by the non-replacement of worn and damaged general waste containers over a period of years
- Additional staff resource for monitoring and reporting

Compared to the current system the savings caused by the new system may include the following:

- More cost-efficient containerisation
- Less time consumed for internal and external transportation
- Improved waste segregation resulting in less waste requiring expensive containerisation, transportation and treatment
- Less incidents of accidents and unsafe procedures resulting in less costs of post-trauma treatment, sick leave and administration

It is now estimated that the total cost for the new HCRW contract will be in the range of 1.9-2.0 million a month or R 23-24 million a year, with a possible 1-2 million add-on due to the inclusion of additional training, inclusion of domestic waste liners in the scope of contract (resulting in a corresponding saving in the budget for domestic waste removal) as well as financing costs for durable items to be financed via the HCW Service Providers.

The pilot site survey results indicate that health facilities themselves need to spend more money to support better waste management. More money should be spent on better PPE that is presently often inadequately distributed to workers at risk and to bring the Department in compliance with the intention of the Occupational Health and Safety Act. General assistants at Leratong often wear surgical/latex gloves that are unsuitable for cleaning and working with waste. Also as previously discussed better segregation of health care waste can only happen when there are sufficient general waste containers as

well as risk waste containers. At both the pilot sites it was found that there are insufficient containers for general waste or that condemned containers are not replaced. Many of the general waste containers still in use are very old and in urgent need of replacement. The budget for this will either need to be included in the overall HCRW tender as indicated above or will have to be found at a facility level.

At Leratong it is estimated in the Survey Report that a 15% reduction of medical waste through better segregation will save the hospital almost R70 000 in 10 months. The Waste Composition Survey Conducted in July at Leratong found that 22% of waste in the risk waste containers is actually general waste.<sup>4</sup> General waste should be disposed of more cheaply at the landfill site. Furthermore, the pilot project conducted separate segregation of empty and unbroken vials by providing alternative receptacles to the costly sharps containers. This demonstrated a scope for saving approx. R 1000 on a monthly basis due to a significant reduction in the number of sharps containers required and reduced amounts of waste to be treated. However, this required a resource demanding process of receiving an exemption for once-off landfilling of empty and unbroken vials at the Mogale Communal Landfill for the accumulated vials. Therefore there is significant scope for improvements and cost savings at health facilities. The Survey Report also found a minimal programme of recycling at the pilot sites of cardboard boxes and silver recovery from X-ray fixer and films. Recycling of glass and/or paper potentially could also introduce savings.

### **3.7 Policy and guidelines for HCWM in GDoH**

One of the requests coming from the provincial HCWM committee is that the province should generate clear policies. The areas identified for policy are recycling, green procurement, waste minimisation, small HCRW producers, procurement of chemicals, the disposal of anatomical waste and disposal of expired drugs. In some cases it is possible there is policy but that it isn't widely known about. There are many confused discussions at the provincial level about the existence or not of policy, procedures and guidelines. Meetings of the HCWM provincial committee make no reference to the Policy document for HCWM in the Province agreed by the provincial cabinet and also do not refer to the present SABS Code of Practice for Handling and disposal of waste materials within health care facilities (SABS 0248). To clarify the present policy position in the GDoH it is essential that the HCWM committee should oversee an audit of present policies.

The Gauteng Sustainable HCWM Project is in the process of writing provincial guidelines and these will help fill some policy gaps. The SABS Code 0248 is being revised. The revision of the code is being widely consulted and numerous inputs have been received primarily from government departments and the Gauteng Sustainable HCW Management Project. This process has been carefully tracked so that guidelines and regulations written for Gauteng complement other national codes.

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<sup>4</sup> DMSA Draft Report Analysis of Phase 2 of the Medical Waste Management Study Undertaken at Leratong Hospital 2002

### **3.8 Reporting and HCWM in GDoH**

There is no systematic reporting of HCRW in GDoH. The present service providers keep slips recording how many units of particular receptacles were collected from each facility. These Waste Manifest Slips are required by the Road Transportation Act but include only data on the number of units and not the actual mass of waste, as there is no weighing of the waste from individual health facilities. The GDoH has no systematic environmental health or OH&S reporting at a facility, regional or provincial level.

For the future the Health Care Waste Information System (HCWIS) to be introduced in the province by DACEL via a particular provincial regulation expected to be promulgated in the second half of 2003 will require the weight of waste collected from health facilities when it is delivered to the treatment facility to be recorded. This information will be collated by DACEL. The information system will be piloted in 2002 and 2003 by the Gauteng Sustainable Health Care Waste Project prior to the introduction of the new GDoH tender by which time it should be legislated for in the regulations, thus, making reporting compulsory. The HCWIS is expected to be fully operational from the second half of 2004 and will gradually be expanded to include additional waste streams and possibly additional levels of information on already regulated waste streams as the capacity to do so increases both in the public administration and in the organisations having to submit reports. The value of the Waste Information System is that the public gets a tool to monitor the generation of waste and compare that with the current and planned installed and compliant treatment capacity as well as a tool for ensuring that priority waste streams are tracked from generation to final disposal. The possible value of this information for the DoH needs to be established but is likely to include: i) insight into development in quantities for possible assessment of segregation efficiencies, need for interventions etc. ii) supporting the introduction of a mass based monitoring system at facility level for assessment of performance of facilities and scope for cost savings including bench-marking facilities against each other. It is proposed that the billing for the new HCW tenders for HCRW will, in part, be based on mass as this is believed to provide incentives and information conducive to improving the segregation efficiency. This is being tested at the pilot sites.

Other service providers operating in the province servicing the private sector have already made it possible to weigh individual HCRW receptacles. For example, Evertrade has a sophisticated microchip system that means waste, in principle, can be tracked from each ward and Clinical Waste Management weighs each disposable container when it is placed on the conveyor to be fed to the batch fired primary chamber of the incinerator.

## **PART 2: TRAINING CAPACITY FOR HCWM IN GAUTENG**

### **SECTION 4: TRAINING CAPACITY FOR HCWM IN GAUTENG**

Training will be an important contribution to capacity building for HCWM in the province. This section discusses training opportunities for HCWM in the province through the DoH. It discusses:

- Training opportunities in Gauteng DoH
- GDoH training materials for HCWM
- Approaches to training

#### **4.1 Training opportunities in GDoH**

Training in the DoH happens through three distinct channels. These are:

- Professional development that offers short courses and bursaries to health professionals
- Generic skills development that provides short courses in generic issues for all categories of staff in the DoH
- Inservice training that provides informal training at health facilities and throughout the Region.

In total there are 42 000 workers in the health service in Gauteng. Of these 21 000 are health professionals of which 85% are nurses. The bulk of nursing staff is with the province. Local authorities presently employ about 600 nurses only. Most training happening in GDoH addresses provincial priorities listed in the Box 2.

#### **4.2 Professional development**

Professional development is a sub-division of the Directorate for Human Resource Development. It administers bursaries for health sciences students in a number of limited fields and for health workers currently working in the service to upgrade their professional qualifications. Many nurses are studying community nursing, nursing management and nursing education either part-time or by distance learning.

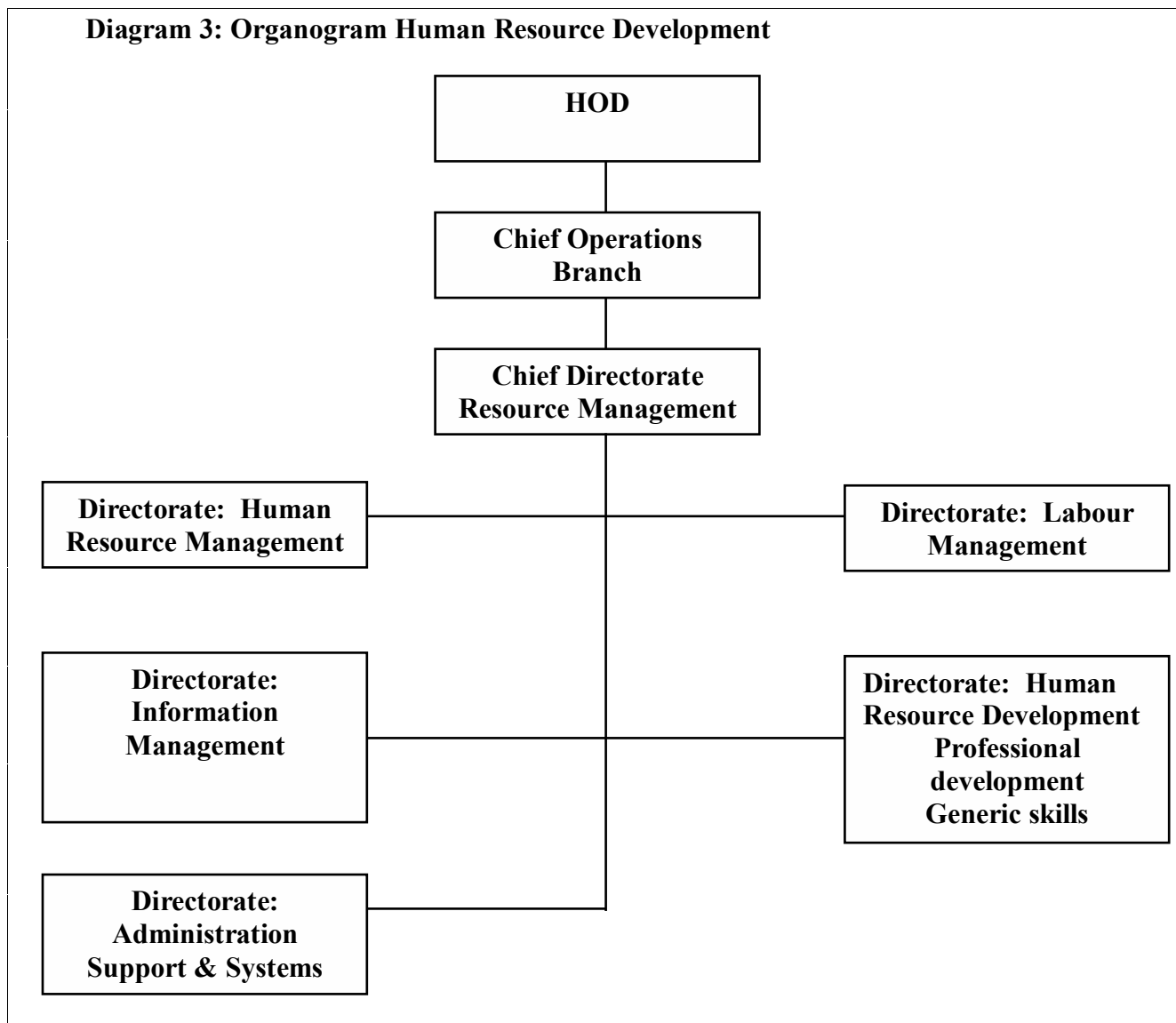
Professional development also finances multi-disciplinary short courses for CPD points (CPD or continuing professional development is a requirement for doctors to remain registered with the Health Professions Council). At present there are no plans for multi-disciplinary short courses to address occupational health and safety topics or environmental health.

The focus of all of the training is primarily clinical management issues such as new protocols for care, treatment regimes or developments in the clinical field. There are professional training forums for the major professional groups although there isn't one for infection control. Training for specific professions is advertised through the relevant

training forum. Other more general training is advertised to professionals through the CEOs of health facilities.

There is a category of training provision called “special projects.” This includes projects such as the workplace HIV/AIDS programme. Special projects are often donor funded and can involve training lasting up to a week.

**Diagram 3: Organogram Human Resource Development**



### 4.3 The generic skills training programme

The generic skills training programme is also a sub-division of the Directorate for Human Resource Development. The generic training needs identified for all health workers are usually addressed through the provision of a short course programme. Generic training needs include issues such as:

- Introduction to implementing quality assurance in the workplace
- Customer Care
- Financial management for non-financial managers
- Writing skills for managers
- Project management
- Community participation and empowerment
- Strategic planning
- Leadership
- Labour law for managers
- Communicable disease control
- Motivation and attitude change for managers
- The structure and function of the Gauteng Department of Health
- Clinical supervision of health profession students

The short course training programmes are generated by the provincial Human Resource Development Directorate. The province conducts the training needs analysis and identifies the training programmes. The programme for 2002/3 to address the training needs such as those listed above is divided into the following broad categories:

- Management development programmes
- Professional development
- Training for secretaries and administrative staff
- Support staff training
- Generic skills development

The region administers this short course programme. The Regional Training Co-ordinator provides the administration for these programmes. Health facilities are informed of training opportunities and are invited to nominate candidates to attend. It is the CEO of each facility that is responsible for the nomination of these individuals. A Regional selection committee then decides who will attend the course. However Regions have no training budget and there is no evaluation of personnel once they return from training programmes.

Abet (Adult basic education and training) is also part of the generic skills programme. A specific Abet programme has been developed for the DoH and it is possible to develop new modules for inclusion in the programme. Many general assistants and other non-medical support staff attend this programme. It would be useful to develop a HCW module for this programme. However the pilot sites identified the introduction of multi-disciplinary on-the-job training for medical and non-medical staff and the introduction of a designated health care waste officer as the priority training interventions.

#### **4.4 In-service training**

In-service training is organised at a facility or Regional level. Bigger hospitals, such as Leratong, have their own in-service training departments and the Regions have in-service

trainers who service all facilities in their Region or sub-cluster. In Region A, there are three clusters. The cluster regional training co-ordinators are involved with inservice training that is completely outside the other training programmes discussed above. At the pilot sites neither facility had received training from these regional trainers. This is probably because Leratong organise their own inservice training for all categories of staff and Itireleng go to Lillian Ngoyi where inservice training is offered to all nursing staff in provincial Soweto clinics. At Itireleng no inservice training opportunities existed for non-medical staff.

The Regional inservice trainers do not offer any training in environmental health and occupational health and safety anywhere in the province. Training for health and safety representative is organised through inservice training from specific facilities with inservice training capacity but is usually facilitated by outside trainers and does not include the Regional inservice trainers.

#### **4.5 Health promotion**

The Deputy Director for Health Promotion is part of the Directorate for Public Health. There are approximately 300 health promoters in the province most of whom work in the Regions and Districts. These people are based in primary health care services such as Itireleng clinic and do awareness and education in the clinics and out in the local community. There is very little formal health promotion training provision in South Africa. The majority of Gauteng health promoters hold standard 10 and attend short course programmes about health promotion. For a section of the health promoters this has in the past included environmental health awareness mainly centred on pollution control. Health promotion in the province has no direct line function to manage or set priorities for health promoters and must work in collaboration with Regional and District management structures.

#### **4.6 Outsourcing of training in the DoH**

All training programmes are outsourced to training providers who appear on the DoH list of preferred providers; accept those facilitated by inservice training departments and regional co-ordinators. This list helps ensure that criteria are applied consistently to the selection of training providers and training courses. The criteria for selecting training providers include credibility of training provider, that there is a back-up service if this is an individual provider and that small and medium enterprises and employment equity are encouraged. The criteria for the selection of courses are;

- Outcomes based
- NQF (National Qualifications Framework) level and occupational group
- Modular if longer than 1 day
- Experiential and participative
- Follow-up of learners
- Multi-disciplinary
- CPD credits where applicable

- Meet health priority needs

The procurement regulations in the DoH with respect to training courses are;

- Training less than R500, on once off basis, no quotes required
- R501 to R2000 three telephonic quotes with written one from lowest
- R2001 to R100 000 in one financial year three quotes unless sole provider
- Sole provider must provide proof of status
- If more than R100 000 in 1 year, then must go out to tender.

#### **4.7 Training materials**

The DoH has no training materials or awareness materials such as posters or pamphlets for health care waste management. Health facilities often make their own signs to reinforce and remind workers of correct segregation practices. Such signs are usually very simple photocopied A4 sheets. Also some service providers provide very simple photocopied or printed posters that normally do not appear to have been produced by experienced training professionals.

Phambili Wasteman and Buhle Waste (present service providers to the GDoH) provide basic pamphlets and a booklet to support the use of their waste containers. The pamphlets are written in English. There are no print materials in other languages. Buhle use a short 10-minute video of people scavenging on a landfill site to reinforce learning. The video does not show health care waste on a landfill site. There are no posters or other teaching materials.

#### **4.8 Approaches to training**

The provincial Human Resource Development Directorate in the Department of Health expressed some frustration with their present model of working. It is felt that short courses provide health workers with skills and knowledge that they may not be able to apply once they are back in the workplace setting. This can be for a range of reasons including the lack of incentives for health workers especially financial incentives, lack of support from management and the lack of opportunity to innovate new approaches in the workplace. It is felt that a mentorship approach in the workplace and on the job training may be a more effective route to go. It is also a strong motivation for addressing training within the context of the development of a better or improved management system.



## **SECTION 5: TRAINING FOR HCWM AT TERTIARY INSTITUTIONS, WITH PRIVATE PRACTITIONERS AND STATUTORY TRAINING REQUIREMENTS**

The discussion in this section identifies the opportunities for HCWM training at tertiary institutions in the province. The discussion focuses on:

- Training for environmental health and occupational health
- Training for nurses and doctors in HCWM

The section also identifies training offered by private practitioners and other institutions and briefly outlines statutory training requirements.

### **5.1 Environmental health and OH&S training**

#### *Environmental health and OH&S at Technikons*

Technikons offer environmental health training. The Technikons of the Witwatersrand and Pretoria train environmental health practitioners. Environmental health students cover waste streams and waste management in the second year and then in the fourth year briefly touch on health care risk waste as part of the course that examines hazardous waste. However training for environmental health practitioners is set to change with two exit levels from undergraduate studies. After two years a student can exit the programme as an assistant environmental health practitioner and after four years as an independent practitioner. In the fourth year students will pursue specialist electives that could include waste. The final curriculum is yet to be finalised.

Technikon SA offers a National Diploma in Safety Management (NADSAM). This is a three year distance learning programme.

Technikon Witwatersrand also runs a short course for five days on waste management. This course is run twice a year and trains approximately 40 people. Most of the participants are EHPs, but others are from landfill sites and private practitioners. There are no set requirements for entrance and the course is accredited through the Technikon and with the Institute for Waste Management of Southern Africa. There is an optional second week that specifically covers management issues for frontline managers in the waste sector.

#### *Environmental engineering and management technikons and universities*

Civil engineers are trained at technikons and universities in the province. At the University of the Witwatersrand the focus of environmental engineering is on sanitary landfill sites and mining waste and health care waste is not part of the curriculum. At Potchefstroom University there is a three-day environmental management course that also focuses mainly on landfill sites.

## **5.2 Training for nurses and doctors**

### *Nursing Colleges*

There are four nursing colleges in the province. All of these colleges send their students for placements in Gauteng public health facilities. Prior to working in the wards and clinics students receive orientation training. Some of this training is done at institutions and does include a brief and very basic introduction to the waste management system.

### *Medical Schools*

There are three medical schools in the province. All medical students are sent for practical experience in GDoH facilities. At the University of Witwatersrand medical students are given instruction on safe use of sharps and the proper disposal of sharps prior to beginning clinical medicine on the wards in the fourth year. Once on the wards nurses informally instruct medical students about where to put waste and labelling of containers or above liners helps students know where to dispose of waste.

### *Health science curriculum*

The curriculum for nursing, medical and environmental health sciences students cannot be amended without the participation of the national Health Professions Council and therefore this is best facilitated at a national level. Once a policy and standards for HCWM in health facilities are agreed for the province it is important to target the orientation programmes for health sciences students completing placements in Gauteng health facilities.

### *Schools of Public Health*

There are three schools of public health in the province. Thulsano School of Public Health, co-ordinates a programme of short courses in public health. The Masters in Public Health at Thulsano includes one integrated module in environmental health and OH&S. There is no formal training on health care waste. Primary health care management and health services management at the Witwatersrand Business School does not include HCW.

## **5.3 Training by private practitioners and other institutions**

There are some private practitioners who are used by the service industry and the DoH to provide training expertise. These people have a varied background from engineering, safety training and environmental auditors. An expansion of any training provision in the province is most likely to involve the use of independent consultants. However the training materials used are very limited and videos, for example, are made for other environments such as Australia. The “Buyers Guide” prepared by the Institute of Waste Management of Southern Africa lists only one private company with communications

and training expertise although other companies do offer training as part of a package with technical expertise and impact/risk assessments.

*South African Centre for Essential Community Service (SACECS)*

The above centre in collaboration with Wits Health Consortium offered a three-day programme to all health care personnel in HCWM. The course was held at the end of June 2002 and was presented by a group of private consultants. The course included a discussion on hazards, safe technologies, waste management plans and the development of training programmes. This course applied for CDP points. Notice of this course was found at the Leratong pilot site.

*Institute of Waste Management of Southern Africa*

The Institute of Waste Management of Southern Africa (IWMSA) reports that there is no formalised HCWM training. The Institute is conducting a training needs analysis during 2002/3 in the waste industry as a whole that should include HCWM. They plan to present a training framework including an outline of training modules and career paths in the next year. This will be in keeping with government approaches to training and should allow the Institute in the longer term to become a body for accreditation of training programmes in this field.

Their membership is largely the waste industry and local government although it does also include national and provincial government departments. The “Buyers Guide” produced by the Institute is a good vehicle for private consultancies and industry to advertise services. The DoH is not represented in this guide and health care waste is not a specific focus and it wasn’t clear whether the present service providers in Gauteng are members. The Institute could pursue expanding membership in the HCW field.

*Infection Control Association of Southern Africa*

The infection control society offers training courses to infection control nurses. These courses are largely sponsored by industry. In the last year there has been no training offered on HCW specifically.

#### **5.4 Statutory training structures**

There have been enormous developments in the education and training sector and it is important to understand what the present requirements are for education and training in South Africa. The principles of the present approach to education and training are very important and should impact on any teaching/learning situation.

The South African Qualifications Authority (SAQA) has brought education and training together under the umbrella of the National Qualifications Framework (NQF). NQF starts at preschool education and links adult basic education and training (ABET) with formal schooling and later further and higher education opportunity. There are eight levels in the

NQF. Standards are set for each NQF level by National Standards Bodies (NSBs). There is a NSB for Health and Welfare. Each NSB is able to appoint Standard Generating Bodies (SGBs) for different fields of learning such as environmental health. The Professional Boards of the Health Professions Council will be the SGBs for health disciplines like environmental health. There are SGBs for environmental health, occupational health and safety and environmental science, environment and waste management. However these bodies are not functioning fully because a funding mechanism is not yet in place.

The providers and assessors of training are accredited and monitored by Education and Training Quality Assurers (ETQA). IWMSA could become an ETQA for the waste/environmental sector rather than a provider of training themselves. An important development is that SAQA only accredits courses that are at least 6 months of duration. This means that there is no SAQA accreditation for short courses.

SAQA is supported by the Skills Development Act that requires learning to be occupationally based. The National skills Development Strategy aims to ensure that “life long” learning is the national approach to education and training. Employers are required to pay a skill’s development levy that is then used to fund a Sector Education and Training Authority (SETA). A short course can be registered with a SETA. Once an employer decides to register his/her employees for training then he/she can ask for reimbursement from the relevant SETA if the training is recognised by the SETA.

Government does not pay the full skills levy and therefore cannot claim a reimbursement for SETA approved training. However, government can be awarded a discretionary budget from a SETA if the training undertaken by government fits with the “Sector Skills Development Plan”.

The national approach to education and training is “outcomes-based.” There are three types of outcomes. These are critical outcomes (such as problem solving abilities), specific learning outcomes (the knowledge, skills and values within a specific context) and end product outcomes (this follows as a result of a package of learning activities). This means that education should not be reduced to a set of facts and information embedded in a single subject such as in content-based learning. Instead end-product objectives are supported by learning objectives. These emphasize performance through an integrated learning process that addresses skills, knowledge and values.

## **5.5 Approaches to training in the waste sector and the DoH**

IWMSA gave examples of comparable development in other areas of waste management. Generally on the job training for waste management is not known. Instead the traditional model of offering short course programmes is what is expected to support waste management in South Africa. Reference was made to other parts of the world where separating waste in the domestic environment is enforced through the law and encouraged through public education programmes. This is a powerful backdrop for workplace segregation schemes because the practice is already entrenched in people’s

personal lives. International companies in car manufacturing have well-developed systems to separate waste as part of the manufacturing process.

## **SECTION 6: HCWM TRAINING BY SERVICE PROVIDERS IN GAUTENG**

This section discusses information about the training provided by service providers in the province. It discusses:

- The training offered by the present service provider at the two Gauteng Sustainable Health Care Waste Management Project pilot sites
- The training provided by other service providers in the province who are not necessarily only servicing the public sector.

### **6.1 Training offered by the service provider at the pilot sites**

Both the pilot sites for the Gauteng Sustainable Health Care Waste Project reported no training provision for HCWM other than that offered by the service provider Buhle Waste. Buhle trained one group of nurses and general assistants at Leratong at the start of 2002 and according to their records also trained general assistants and a second group of nurses in July 2001. This is despite training not being specified in the present service contract. However Buhle has not trained the staff at smaller facilities such as Itireleng. The fact that training has happened independent of contractual obligations points to the importance of integrating a training component into the existing work of the service providers so that training can be systematic and for all health facilities. At present training only happens when it is requested by health facilities or when Buhle themselves identify a problem.

At the time of the research for the survey reports at the pilot sites Thabo Moeketsi offered training to institutions serviced by Buhle. He is the only trainer at Buhle Waste. He is not a dedicated trainer and is the Quality and Environmental Manager. He also does ward inspections and is a general trouble-shooter for Buhle. Most training sessions he offers would last at maximum one hour. There is no systematic programme to train at the public health facilities serviced by Buhle. Buhle's training is supported by a short video of people scavenging on a landfill site. A basic pamphlet is also available. There is a booklet that is available to management, infection control and inservice training departments. However Moeketsi feels there is a need for a wider range of visual materials to support training. In Thabo Moeketsi's opinion knowledge isn't really the problem but "enforcement" of proper waste management is not happening. (Although focus group research at the two pilot sites showed that some nursing sisters are not always clear about the segregation of HCW especially at the clinic.<sup>5</sup>) Moeketsi also feels that management should be involved in HCWM training because people are presently not rewarded for what they do. There are no incentives for health workers to comply with the HCWM system. It was thought that it is important to get more people involved with HCWM by site visits to landfill sites, incinerators and other treatment facilities.

The main training topics covered by Buhle are the proper segregation of waste, how to handle containers, the importance of not overfilling containers and the importance of procuring the right equipment. In general, doctors don't want to come to the training and

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<sup>5</sup> DACEL Draft Survey Report Itireleng Clinic April 2002 Gauteng Sustainable Health Care Waste Project

paramedics often use general waste bins rather than risk waste facilities because there is no obvious means to target them. Training is conducted in English and in African languages.

## 6.2 Training by other service providers in the province

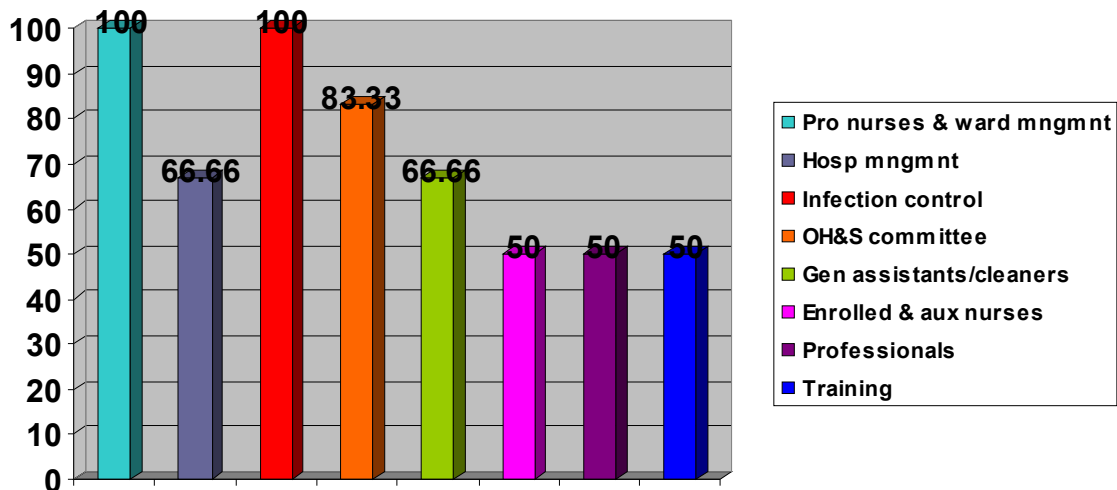
A survey of other service providers in the province found that where service providers are servicing the private sector there is a greater commitment to training. In the survey twelve service providers and treatment facilities in the province were asked to complete a questionnaire about their training services and training needs. Of these twelve companies six responded. Only one of the respondents was a treatment facility.

In the private sector training happens at all levels in the hospital from management to the cleaning department.

### Results of the service provider survey

#### Figure 1: Type of training done

- In service training for professional nurses and ward management - 100%
- In service training for hospital management – 66.66%
- In service for infection control – 100%
- In service training for occupational health and safety committee – 83.33%
- In service training for general assistants/cleaners – 66.66%
- In service training for enrolled and auxiliary nurses – 50%
- In service training for allied professionals e.g. laboratory staff – 50%
- Multidisciplinary training – 50%

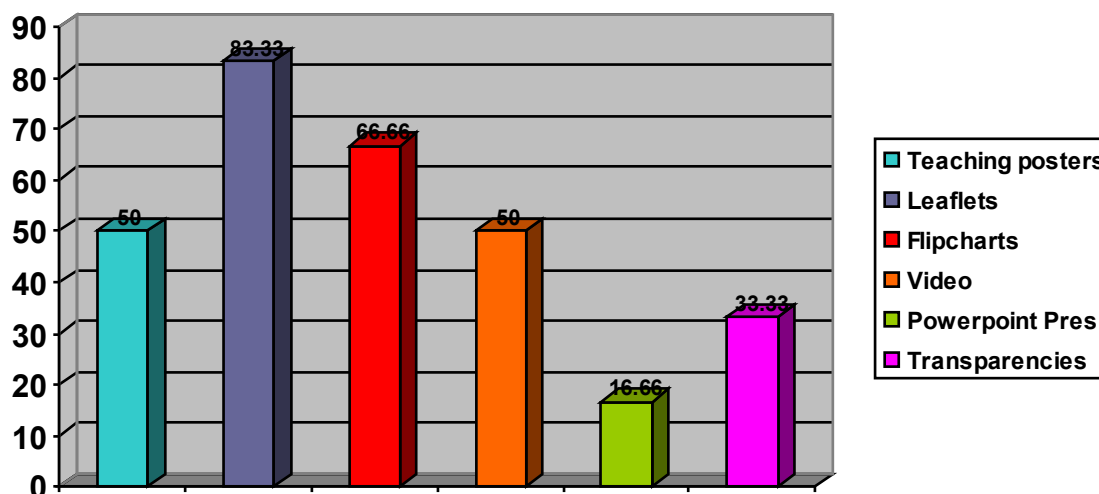


\* IST – In Service Training

Figure 1 shows that all the service providers reported training nursing and hospital management. There was less reported training of allied professionals and enrolled and auxiliary nurses. In the public sector enrolled and auxiliary nurses and student nurses form the majority of nursing staff and therefore training methods to reach them are essential. Only 50% of service providers reported doing any multi-disciplinary training. Fifty percent of the service providers reported that they had one trainer only. None of the service providers had more than 5 trainers. Two-thirds of the service providers reported that they completed between 10-20 training hours per month. Most of the service providers reported using leaflets to support their training. Figure 2 summarises the teaching materials used by the service providers in the province.

**Figure 2: Types of training materials used by the service providers**

- teaching posters – 50%
- leaflets – 83.33%
- flipcharts – 66.66%
- video – 50%
- PowerPoint presentation/electronic media – 16.66%
- overhead transparencies – 33.33%
- other : actual system of containerisation

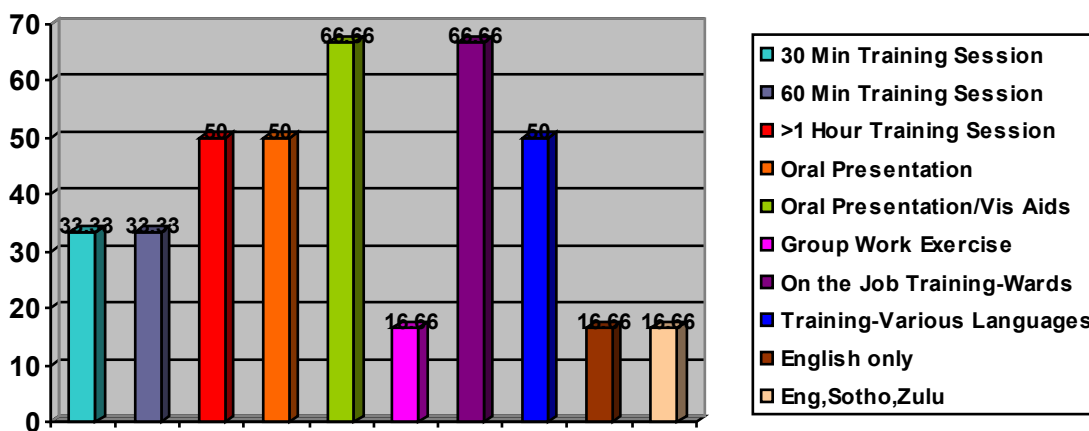


The format of training sessions is either an oral presentation with visual aids or on-the job training. There is very little reported group work. Fifty percent of service providers also reported that their training sessions are usually longer than one hour in length. Very little training is completed in English only and most service providers report that training happens in English, Afrikaans and African languages especially isiZulu and seSotho. Figure 3 summarises the format of training undertaken by service providers



**Figure 3: Format of training sessions**

- 30 minute training session – 33.33%
- 60 minute training session – 33.33%
- > 1 hour training session – 50%
- oral presentation – 50%
- oral presentation with visual aids – 66.66%
- group work exercise – 16.66%
- on the job training in the wards – 66.66%
- training conducted in English, Afrikaans and African languages as appropriate – 50%
- English only – 16.66%
- English, Sotho, Zulu – 16.66%



All the trainers used by the service providers have matric and two-thirds have a post matric qualification. None of the trainers had any teaching or educational qualification instead their qualifications were in the environment/occupational health & safety/engineering or medical fields. Two thirds of the service providers reported that they had sent their trainers on specialist training to enhance their job performance. These courses included toast masters, customer excellence, ISO 14001 Environmental Management and Quality Systems amongst others.

The service providers were also asked to identify the training needs of their staff. These are summarised in Table 1. Their needs include aspects of OH&S, hazards associated with the handling of HCW and technical skills related to their roles and responsibilities such as advanced driving skills and customer relations.

**Table 1: A summary of training needs for the service provider staff**

<b>Category of worker</b>	<b>Training needs</b>
Drivers, operators and truck assistants	Advanced driving skills Customer excellence HAZMAT safety data sheets Occupational health and safety Handling and management of HCW
All/General workers	HAZMAT Problem solving Incineration management Basic information about HCW
Disposal supervisors and assistants Washbay supervisors and assistants Stores supervisors and assistants Consultants and assistants Bookkeeper and financial accounting manager and assistants	Handling and management of HCW

## **PART 3: DISCUSSION AND RECOMMENDATIONS**

### **SECTION 7: DISCUSSION: CAPACITY BUILDING FOR HCWM IN GAUTENG**

This section discusses what needs to happen in GDoH and with local authorities to support improved HCWM in the province. It outlines the following:

- Where capacity should be built in the GDoH
- The implications of the capacity building plans at the pilot sites for the provincial DoH
- Changes to the role of the service provider
- The role of the provincial DoH
- Building capacity in local authorities.

#### **7.1 Where to build capacity in GDoH for HCWM**

The continued programme of organisational change in GDoH makes capacity building for HCWM more challenging. Also the overwhelming conclusion of this report is that capacity for HCWM is extremely limited in GDoH. However the two levels of DoH management central to capacity building are primarily the province and the level of individual health facilities. This is because the Regional level of management should over time become reduced as health facilities become integrated into local authority structures. However given the expertise of EHPs in the Regions, regional support and participation in activities related to HCWM is critical, because the Region continues to play an important coordination and management function for all the clinics throughout the province. A comprehensive programme of presentations to Regional and Provincial GDoH management across the province is essential to establish buy-in for capacity building plans both at the province and in health facilities.

##### *Building capacity in health facilities*

HCWM will happen at a facility level whether facilities are ready for it or not and therefore this is a critical level of engagement. Capacity is best built at this level through the service provider who can be contracted through the HCRW tender to provide a better service. To ensure that the contracted services are well utilized it is essential to ensure that health facilities are well prepared to capitalize on the additional support. This should be facilitated through the appointment of a designated Health Care Waste Officer and Assistant as recommended in the capacity building plans at the pilot sites. Paragraph 7.5 of this report discusses this recommendation in more detail.

##### *Building capacity in the province*

A critical mass for HCWM can be best achieved at the provincial level, because already the HCWM committee draws representatives from each region and some of the larger

hospitals. The role of this committee can be made stronger through broader and rationalised representation as necessary and through formalising the role of the committee. (Refer to paragraph 7.7)

The OH&S function at a provincial level is very underdeveloped and in the absence of OH&S capacity it seems necessary to consider a specialist portfolio for waste in GDoH. Although HCW is a function of OH&S there is no OH&S specialist in post in the province who can fulfil this function. Paragraph 7.9 of this report describes the role such a specialist should be playing in the provincial health department.

## **7.2 Capacity building plans at the pilot sites and implications for provincial capacity building**

Activities planned for the pilot sites will address the present capacity gaps in HCWM at a facility level. The Pilot Site Capacity Building Report for Leratong and Itireleng discusses these activities in more detail. The activities at the pilot sites are:

- The introduction and adoption of revised policies and procedures to support HCWM collated in a Code of Practice booklet for hospitals and clinics
- The appointment of a HCW Officer at both pilot sites and an Assistant HCW Officer at Leratong
- Trained OH&S committee to ensure regular internal monitoring and reporting
- External audits by regional EHP
- Trained supervisory staff who offer on-the-job training to all staff
- Package of teaching aids available to support training
- Booklet of awareness activities to be implemented through the HCW Officer
- Poster and labels as necessary to reinforce use of equipment and new skills

The activities will be evaluated in the pilot site and then revised. For example, all the print materials will be revised to support the introduction of the final choice of equipment system once the HCRW tender is awarded.

Should these capacity building activities at Leratong and Itireleng be successful, then it is expected that the following will happen:

- The tender specifications will include appropriate service provider support for the introduction and maintenance of the HCWM system including training and consultancy support
- All print materials will be amended to support the final system to be implemented in the province and a mechanism to print and distribute the materials agreed
- HCW Officers and Assistant HCW Officers appointed in every provincial health facility as appropriate
- A programme of training for OH&S committees to support HCWM monitoring and reporting

### 7.3 Changes to the role of the service provider

To build capacity for HCWM at a health facility level in the province it is essential that the expectations of the service provider change. The next HCRW tender will be awarded on October 1 2003. The contract period will be for a maximum of 5 years. Results from the pilot site survey reports suggest that the following should be part of the HCRW tender for the future:

- The service provider should provide consultancy support for all health facilities to help introduce new equipment and procedures, to ensure the equipment is best suited and adapted to meet the needs of different environments, to introduce standards, to support monitoring and reporting and to help problem solve.
- The service provider should provide a systematic training programme for all categories of health worker
- The service provider should provide all the equipment for HCWM. This includes all the consumables such as liners and sharps containers.
- The service provider should provide stands/containers and liners for general waste to ensure better segregation.

It can not be stated strongly enough that for successful capacity building in health facilities it is essential that a **partnership** with the service provider is established, where the service provider provides more than the present service level.

### 7.4 Training provision through the service provider

The present training provision in GDoH does not include provision for HCWM. The type of training necessary to support the introduction and use of the HCWM system is largely informal training that should be on-the-job, continuous and supported by effective supervision and enforcement. Therefore in-service training is the most appropriate vehicle for this type of provision. However the lack of capacity for in-service training in the Regions and at the clinics in particular and the lack of co-ordination and systematic planning militate against the use of DoH training structures. A sustained programme of training can be more effectively introduced through the service provider, as is the usual practice in the private sector. This would require that training specifications are part of the tender. Service providers will be required to contract the services of trainers with acceptable skill backgrounds.

#### *Print materials*

All training piloted at Leratong and Itireleng will be supported by print materials. Once an improved HCWM system is introduced across the province then the service provider should be required to provide training and print materials in their service agreements. The range of print materials that may need to be made available to each public health facility are:

- A booklet of awareness activities
- Teaching posters
- Skills posters
- Awareness posters and stickers
- A code of practice booklet for a hospital or for a clinic
- Booklet for monitoring and reporting

The training and print materials used at the pilot sites will be revised to suit the introduction of the final system of choice. However given there may be as many as three service providers across the province it is suggested that the service providers are able to adapt these materials to meet their needs or design their own materials with GDoH approval. Final production and printing of materials should rest with the service provider so that print deadlines coincide with training schedules.

### **7.5 The appointment and training of HCW Officer and Assistant HCW Officers**

Should the HCW Officer and Assistant be successfully introduced at the pilot site then a recommendation will be made to designate such staff for each facility in the province. Broadly the HCW Officer is responsible for facilitating the introduction and maintenance of the new equipment system, liaison with the service provider, ensuring training and communication, support for monitoring and reporting and problem solving as necessary.

In larger health facilities such as hospitals HCWM is a huge task. In hospitals the HCW Officer is most likely to be from infection control, occupational health and safety or a senior in the cleaning department. In smaller clinics this person would most probably be the manager or co-ordinator. It is important to note that the HCW Officer and Assistant are designated posts in the absence of full-time Safety Health and Environment (SHE) Co-ordinators. At the pilot sites a detailed terms of reference for these positions will be evaluated and recommendations made with regard to key results documents. These are not full time positions although the initial implementation of a new HCWM system is very time consuming and an assessment of this will be made of this at the pilot site. It is estimated that the HCW Officer is a 30% post. The terms of reference for the HCW Officer and Assistant are found in the appendices.

The appointment of a HCW Officer for each health facility will establish better communication with the service provider. The interaction of the service provider with the HCW Officer can be specified in the tender documentation. The designation of these staff must happen prior to the award of the new tender so that appointed staff can be oriented to their new role and so that the service provider has a named contact for each facility in the province.

To play an effective role it is essential that the HCW Officers and Assistants are prepared for this task. In the absence of any training provision for HCWM in the province it will be necessary to establish a suitable training programme. To ensure sustainability this programme should be integrated into the professional development training programme

and generic skills development programme in GDoH. This training should be developed so that it is flexible and can also accommodate the training needs of service provider staff where appropriate and regional EHPs. An outline for a provincial HCWM training programme is attached in the appendices.

### **7.6 Support for monitoring and reporting in health facilities across the province**

A new HCWM system must include regular monitoring and reporting. At the pilot sites the OH&S committee will be the reporting structure for waste. This is because the legislated function of this committee is currently under-utilised and therefore can be strengthened in relation to waste. The committees at both pilot sites will be trained as part of the pilot site activities. This training will then be evaluated and modified. If facility level monitoring and reporting is successful at the pilot sites it should be introduced at all other hospitals and community health centres in the province prior to or simultaneously with the introduction of new equipment. This would have to be facilitated through the OH&S Deputy Director in the province.

It is the author's opinion that GDoH should also review the role of NOSA or organisations like NOSA in helping set and maintain standards for the long term in HCWM and OH&S.

#### *External auditing*

Once a HCWM system has been fully introduced including a Code of Practice then it is possible to introduce a system of external auditing. Regional EHPs are expected to inspect hospitals and therefore it is important that they are trained appropriately so that they can also usefully audit the waste system. This will help enforce standards and better reporting. The pilot at Leratong will include an external audit by an EHP. The proposed training programme for HCW Officers would prepare EHPs for this task. This training would need to be supported by the environmental health Assistant Director in the province.

### **7.7 The establishment of a GDoH waste forum**

In general the overwhelming finding of this review is that at present there is very little capacity for HCWM in GDoH. There is no line function specialist for OH&S or environmental health specialist to champion this programme. The only central structure for HCWM at the provincial level at present is an ad hoc committee. To ensure that the activities proposed above happen, it is proposed that GDoH should formalise their existing HCWM committee. The forum should have wide representation from the province, regions and from larger health facilities. The forum should also have inter-departmental representatives from the province including facility planning, environmental health, OH&S, training, quality assurance and Government Shared Service Centre (GSSC). A representative from DACEL would also ensure ongoing communication between the two sectors. Terms of reference for the forum are essential

and a preparatory planning workshop would consolidate the roles and responsibilities of the forum. The forum should report directly to senior management.

The terms of reference for the forum should include provincial policy gaps, the requirements of DACEL regulations, contract monitoring of the new service providers and support for newly designated HCW Officers.

### **7.8 The roll out plan to support the introduction of improved HCWM across all provincial health facilities**

In preparation for the introduction of the new HCRW tender it is necessary For the Gauteng Sustainable Health Care Waste Management Project to prepare a roll out plan for the introduction of the HCWM system across the province. This plan will integrate the elements of the capacity building plan outlined above, such as the designation of HCW Officers and Assistants, the establishment of a Provincial HCWM forum etc with dates for actual implementation of new equipment at a facility level. The plan will also have to include an independent needs assessment at the larger health facilities to identify major technical issues such as the provision of central storage space or the suitability of proposed equipment that may need to be addressed prior to the award of the next tender. The plan should also identify hospitals where greater support is needed with HCWM. It should also include a programme of presentations to management especially in the Regions and to hospital management to help prepare the health service as a whole for the planned change.

Via the tender requirements the selected Service Providers will have to prepare and submit a Roll-out Plan for the contract area that in detail addresses the timing and the use of tools and training in the gradual conversion of hospitals and clinics within the contract area to the new HCW Management System contracted.

The Sustainable HCW Management Project has been granted a 6 months extension for the purpose of supporting the preparation for and the actual rolling out of the new tenders, especially in terms of i) preparation of monitoring and reporting systems, ii) individual support to selected health care facilities having special needs, iii) assistance and supervision of the service providers roll-out planning.

### **7.9 A waste or OH&S specialist for GDoH**

There are a number of reasons why this is an important time for GDoH to review their commitment to waste management in the long term. The application of environmental legislation places enormous responsibility on the generators of waste. The proposed Gauteng Regulations for HCW will require continuous DoH reporting. Also further implementation of national integrated pollution control and waste management strategies will continue to require higher standards of practice. The SABS Code of Practice 0248 is also in the process of revision. The Auditor General's Office has also initiated a project to report nationally on HCRW waste. Finally, it has become evident that there is a considerable scope for making the current HCW practises more cost-effective and that

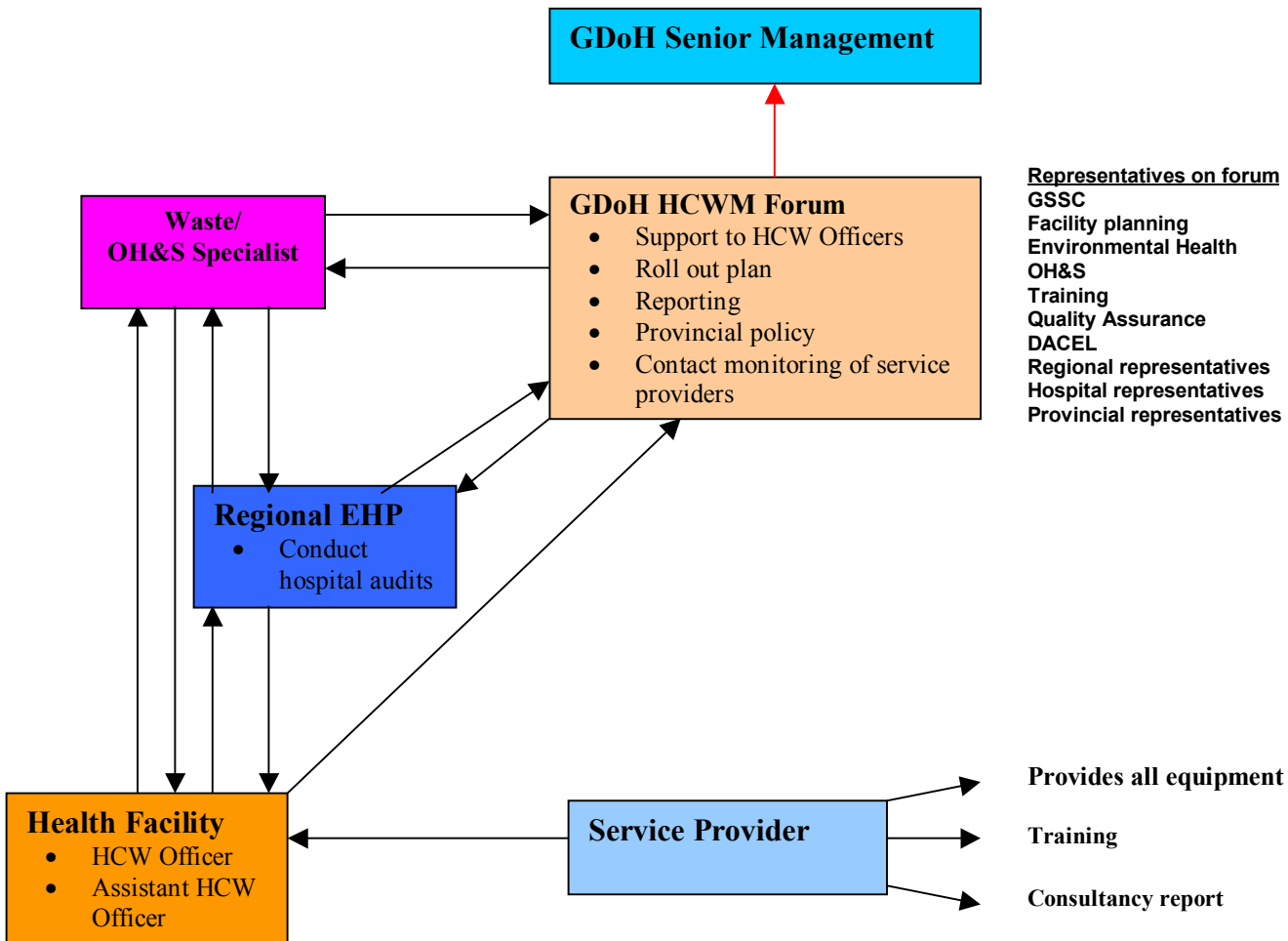


close monitoring of the service providers and the contract conditions would allow for significant cost savings, especially if improvements in the segregation practises are achieved. It is in the light of these developments that the following points are made.

For the DoH to manage waste better for the long term it is essential that an OH&S or waste specialist be appointed to the province. This will ensure that there is a proactive approach to the management of HCRW in the DoH. This includes monitoring of the HCRW service providers in the province, development of facility level and provincial level reporting, policy development and implementation, integration with other OH&S and environmental health functions, liaison with DACEL, support to HCW Officers, specialist projects and compliance with legislation. Outline terms of reference for a waste specialist for GDoH is in appendices. The provision of this post will also provide support to the HCWM forum.

According to Mr. Vukani Khoza (Deputy Director Occupational Health) it is currently proposed that a Hygiene and Occupational Health Advisor be appointed at an Assistant Director level reporting to Mr. Khoza and that this person, if approved would also fill the post as the provincial HCW Specialist.

**Diagram 4: Summary of the capacity building recommendations for GDoH.**



### 7.10 Local authorities

Information collected in this review is much more limited with respect to local authorities. Information from the completed survey forms indicate that local authorities need to be persuaded of the importance of addressing HCRW. Most local authorities do not see the management of HCRW as a priority.

The promulgation of new DACEL regulations may be the necessary catalyst to stimulate local authority response. Given the large number of stakeholders achieving an appropriate response from local authorities will be resource intensive. However it is important not to underplay the potential public health risks that minor generators may pose.

From the completed survey forms local authorities are requesting support on four levels:

- with policy
- with communication to minor generators of HCRW

- with enforcement
- with financial models to support a HCRW removal service for local authorities

The Provincial HCW Management Regulations and the Guidelines produced by the Gauteng Sustainable Health Care Waste Management Project will address the present policy gap. However local authorities will need support in the following areas:

1. The development of innovative service delivery models for minor generators of HCRW
2. The development HCRW Management Plans
3. Training of EHPs to enforce HCWM standards
4. The design and implementation of a communication campaign targeting the minor generators of HCRW.

## **SECTION 8: RECOMMENDATIONS**

The recommendations are presented in three categories.

- Recommendations directed to the Gauteng Sustainable Health Care Waste Management Project who would undertake to fund and oversee the proposed activities,
- Recommendations to GDoH which are essential to support the roll out of the improved HCWM system in the province and to support their long term interest in HCWM
- And recommendations to DACEL with respect to the present capacity gaps in relation to local authorities.

The recommendations made here are not exhaustive but instead are a reflection on what is critical and affordable.

### **8.1 Recommendations for interventions sponsored by the Gauteng Sustainable Health Care Waste Management Project**

1. Establish a 5 day HCWM short course training programme. This programme will target HCW Officers and Assistants in public health facilities or any staff with responsibility for the daily management of the HCW stream. It will also train EHPs responsible for hospital inspections and service provider consultants and trainers. The course should be accredited with the relevant SETA/s.
2. All HCW Officers and Assistants from the 28 public hospitals, HCW Officers from 21 Community Health Centres (CHCs), regional EHPs responsible for hospital inspections/audits and some regional representatives responsible for clinic management sponsored to attend the HCWM training programme between September -November 2003 prior to the rollout of the improved HCWM system. (In total 80-90 course participants)
3. Support to a formalised GDoH HCWM forum. This should include:
  - Two days training for Provincial DoH HCWM forum to review the implementation of improved HCWM across the province, legislative requirements and likely changes and to agree the terms of reference for the forum.
  - A provincial and regional audit of policies in the GDoH to support HCWM and to identify present policy gaps.
4. Preparation of an overall roll out plan to support the implementation of improved HCWM in all provincial health facilities. To include the following aspects for capacity building:
  - A comprehensive programme of presentations to all levels of GDoH management throughout the province about the proposed HCWM system and the roll out plan.

This programme should be implemented with the participation of DoH staff from the provincial HCWM forum.

- Service provider primed to play greater role in training and consultancy support for improved HCWM through workshops facilitated by the Gauteng Sustainable Health Care Waste Management Project.
- The capacity building print materials piloted at Leratong and Itireleng presented in a user-friendly format for modification and adoption by other health care facilities in the province. This includes the Code of Practice booklet, monitoring and reporting procedures both internal and external audit forms, training and skills posters and the awareness activities booklet. This package to be introduced in health care facilities through service contracts for training provision with the service provider.

A budget for these activities is in appendices.

## **8.2 Recommendations to GDoH**

The recommendations to GDoH are in two categories those that concern the short-term implementation of recommendations for capacity building for improved HCWM across the province and secondly into medium to long term developments.

### *Short-term developments*

1. The GDoH in consultation with the Gauteng Sustainable Health Care Waste Management Project ensures that the next HCRW tender builds capacity for improved HCWM by making provision for training, consultancy services and full procurement of all HCRW equipment and consumables and additional containers/stands for general waste at the point of generation.
2. GDoH to formally convene the HCWM Forum and to provide terms of reference for the forum for the next 5 years. This forum will include interdepartmental representation as well as regional and facility level representatives. The forum should also include a DACEL representative.
3. GDoH appoints a Health Care Waste Officer at every health facility in the province. At smaller institutions this will most probably be a clinic co-ordinator. In a hospital it could be either personnel from infection control, cleaning department or occupational health and safety. At the 28 hospitals and 21 CHCs in the province an assistant health care waste officer should also be appointed. The terms of reference for these positions will be evaluated and revised in the pilot sites.
4. HCW Officers and Assistant HCW Officers from the 28 hospitals and HCW Officers from the 21 CHCs are released to attend a 5-day training programme on HCWM organised between September and November 2003 prior to the roll-out of the improved HCWM system.

5. Six regional EHPs currently responsible for hospital inspections/audits be identified and released to attend the 5-day HCWM training programme between September and November 2003 and prior to the roll-out of the improved HCWM system.
6. GDoH enter the 5 day HCWM training programme into their programme of training from 2004. GDoH pays for the training for any additional staff identified to those named above for training in 2003.
7. GDoH to fast track the proposed programme of training with OH&S committees in the 28 hospitals in the province and to support an additional short workshop programme to build the role of these committees in monitoring and reporting for HCWM.

#### *Medium to long term developments*

1. GDoH to appoint a waste/OH&S specialist to the province. This person will oversee all developments in HCWM in the province including the development of monitoring and reporting, compliance with legislation and the development of appropriate policy. The waste/OH&S specialist will also be in a position to guide the DoH in the next tender round in 2008.

### **8.3 Recommendations to DACEL**

1. DACEL to nominate a member of staff to join the GDoH HCWM committee in the DoH to support the introduction of the improved HCWM system in public health facilities from 2003
2. DACEL to initiate a process with local authorities and to commit resources to promote a pro-active approach to the minor generators of HCRW in the province in keeping with the proposed regulations and guidelines produced by the Gauteng Sustainable Health Care Waste Management Project.

## **APPENDICES**

1. Terms of reference for the Health Care Waste Officer in health facilities
2. Motivation for a Health Care Waste Specialist in the Gauteng Department of Health
3. Outline for a Health Care Waste Management Course
4. Budget for capacity building activities to be funded by the Gauteng Sustainable Health Care Waste Project

## **Appendix 1: Terms of reference for the Health Care Waste Officer in health facilities**

### **Background**

The Health Care Waste Officer (HCW officer) is a part time designated responsibility for a key player in the present waste management system. In hospitals and community health centres, the HCW officer should have one or two assistants to facilitate some of the tasks.

The HCW Officer acts as a champion for health care waste. He/she facilitates and coordinates health care waste management in a health facility. The HCW Officer liaises with all role players at all levels within the hospital including infection control, the cleaning department, OH&S committee, management, training and the external service provider. It is an approximately a 30% time post although during implementation of new equipment it will be up to 70% time for a limited period only.

It is essential to understand that the Occupational Health and Safety Act places responsibility for occupational health and safety squarely with the employer or CEO of the health facility. The effective management of health care waste is part of the duties of the employer imposed by this Act and it is an integral part of attaining good occupational health and safety standards in a health facility. For example, the risk of needlestick injury is reduced through improved containerisation and segregation practices; the risk of fire is reduced through good housekeeping standards and safe storage practices. Therefore accountability for health care waste management rests with the CEO or clinic manager and not with the HCW officer. Likewise management of the day to day implementation of the health care waste management system rests with line managers in the health facility and not with the HCW officer. The HCW Officer acts as a guardian of the standards and gives assistance and guidance to the CEO and hospital/clinic management.

### **Selection of the HCW officer**

In hospitals across the province the cleaning department, infection control and occupational health and safety are all involved with the present health care waste management system. In different institutions these role players assume different levels of responsibility for waste. Presently many of these people are involved in crisis management with regard to waste. The introduction of a health care waste officer will help establish a pro-active approach to the management of waste in a health facility.

It is advised that the HCW officer be selected from senior nursing management, infection control or from dedicated full-time occupational health and safety services. The HCW Officer must have a background of matric plus three years tertiary training to successfully complete the five day intensive training programme which will prepare him/her for this appointment.

In smaller health facilities such as a community health centre it is advised that the HCW officer should be a designated function of the OH&S representative or of senior nursing



staff. In a small clinic the role of the HCW officer is greatly reduced and the clinic manager should be mindful of his/her responsibilities with respect to waste and should be designated as the HCW Officer.

### **Qualities of the HCW officer**

The role of the HCW officer is to facilitate the management of health care waste in his/her health facility. Therefore it is essential that the HCW officer is able to communicate with a wide range of role players including senior management, external service providers and health workers. The HCW officer must be able to facilitate team work.

The HCW officer requires excellent problem solving skills and should be able to follow through a plan of action. He/she should have plenty of initiative and self-motivation. . The candidate should also be familiar with collecting information and the preparation of short reports to ensure proper performance monitoring.

### **Scope of work**

The job of the HCW officer involves understanding all the waste streams generated in health facilities. The largest waste stream in a health facility is the general waste stream. This waste stream is collected by the municipality and taken to the landfill site. Health care risk waste includes sharps, infectious waste, anatomical waste, chemical waste and radioactive waste. Health care risk waste must be containerised correctly and taken to an approved treatment site. It is extremely costly to the DoH when general waste is disposed of in the risk waste stream and extremely hazardous when risk waste becomes part of the general waste stream and is taken to the landfill site. Because of the hazards associated with risk waste the HCW officer will focus his/her work around this waste stream. However he/she will not be successful in this task without also understanding and providing improvements to the general waste stream as necessary.

### **Key outputs of the HCW officer**

To implement the requirements of the proposed Gauteng Code of Practice for health care waste in health facilities, the OH&S Act as related to health care waste and other relevant codes of practice. The health care waste officer will:

1. Maintain health care waste management standards in line with the Code of Practice, OH&S legislation, other guidelines and infection control.
2. Obtain commitment to improved health care waste management from all levels of management
3. Communicate to all role players about improved health care waste management
4. Monitor health care waste management on a regular basis through an ongoing programme of performance monitoring, auditing and incident reporting.

## **Supporting Outputs for the HCW Officer**

1. Maintain health care waste management standards
  - 1.1 Inform all levels of management about the requirements of the proposed Gauteng Code of Practice, the OH&S Act, other relevant codes of practice and other relevant guidelines.
  - 1.2 Contribute to the development of procedures with regard to health care waste management as necessary
  - 1.3 Assist with the implementation of procedures for health care waste management
  - 1.4 Promote continuous improvement in health care waste management and encourage waste minimisation and recycling.
  
2. Obtain commitment to improved health care waste management at all levels
  - 2.1 Liaise with all department heads about health care waste management through attendance at OH&S committee meetings, departmental meetings, senior management meetings or other mediums of communication
  - 2.2 Integrate health care waste management with day-to-day routines of the hospital.
  - 2.3 Liaise with supervisors and safety representatives with regard to incidents and where necessary support investigations
  - 2.4 Liaise with the service providers on a regular basis
  
3. Communicate to all role players about improved health care waste management
  - 3.1 Provide regular reports to hospital management about health care waste management
  - 3.2 Provide regular reports to OH&S Committee about health care waste management
  - 3.3 Ensure an ongoing training programme is in place for all staff in collaboration with the service provider
  - 3.4 Co-ordinate awareness activities in collaboration with the service provider
  
4. Monitor health care waste management on a regular basis
  - 4.1 To monitor the service agreements with all the service providers and check that contracts for the off site treatment of health care waste are honoured
  - 4.2 Ensure that there is an internal performance monitoring of the health care waste management system
  - 4.3 Ensure external audits are conducted by regional environmental health practitioners
  - 4.4 Ensure there is an incident reporting and investigation system established in collaboration with the OH&S committee
  - 4.5 Be proactive in the identification of problems and solutions with regard to health care waste management

### **Assistant HCW officer**

The assistant HCW officer will have the qualities of the HCW officer but will share less of the responsibilities. A larger health facility can appoint two Assistant HCW Officers. It is not proposed to specify the exact role of the assistant because it is envisaged that in each health facility the responsibilities will be shared differently according to the background and position of the designated staff. However it is expected that the Assistant HCW Officer will be senior nursing manager and/or a senior from the cleaning department.

## **Appendix 2: Motivation for a Health Care Waste Specialist in the Gauteng Department of Health**

### **Key roles for Waste Specialist**

The position of a Waste Specialist in the Gauteng Department of Health is one of several capacity building recommendations made by the Gauteng Sustainable Health Care Waste Project. The motivation for this position is made because of the need to strengthen the following areas for improved health care waste management (HCWM) in the long term. These are:

- Improved contract monitoring with all service providers in the province
- Improved segregation and cost savings at health facilities
- Integration of HCWM function into OH&S to ensure long term sustainability of HCWM function in the provincial health department
- HCWM reporting

### ***Improved contract monitoring***

The management of health care risk waste is estimated to cost the Gauteng Department of Health (GDoH) between R30-R40 million Rand. This is the cost of contracting the containerization, collection and treatment of risk waste in provincial health facilities. However this figure does not reflect the total cost of health care waste management, as it does not include the containerization, collection and disposal of general waste. The larger volume of waste is found in the general waste stream in health facilities and at present the total cost of managing this stream to Gauteng Department of Health is un-quantified.

The present contracts with service providers are unmonitored both at a provincial and health facility level. It is planned that in collaboration with GSSC (Gauteng Shared Services Centre) the new tender contracts will be fully monitored. This includes the billing system; standard of supplied equipment, standards at treatment facilities and that training specifications are met. Some of this contract monitoring will be contracted out. However the GDoH Waste Specialist will facilitate the appropriate actions by the DoH.

### **Improved segregation and cost savings**

The successful management of health care risk waste is however dependent on good segregation practices in health facilities. The management of health care risk waste can not be separated from the successful management of health care general waste because good segregation principles require the separation of waste at the generation point.

The treatment of health care risk waste is costly. When general waste is included into the risk waste stream, the costs are increased unnecessarily. The waste composition study conducted at Leratong Hospital found that 25 % of the waste taken for incineration was in fact general waste that could have gone to the landfill site at much reduced costs. Good segregation practices at source are therefore critical in the good management of health care waste. Good segregation also ensures better occupational health and safety by

reducing the likely incidence of needle stick injury and by reducing the incidence of exposure to infectious waste.

Good segregation practices in health facilities are dependent on the following factors:

- well designed and user friendly containers
- well positioned containers
- strict colour coding
- sufficient equipment and consumables at all times
- supervision and enforcement of standards
- good policies and procedures
- trained staff
- regular reporting
- support from health facility management

These important practices must however be understood and supported throughout the GDoH. A Waste Specialist can facilitate the introduction of incentives and segregation targets to help support better segregation and ensure cost savings for health facilities.

### ***Long term sustainability of the HCWM function in GDoH***

Occupational health and safety (OH&S) in health facilities must include waste management. In the absence of dedicated OH&S officers or SHE co-ordinators the Gauteng Sustainable Health Care Waste Project has proposed to the Department of Health that part time Health Care Waste Officers be appointed.

It is essential that HCWM be fully integrated into OH&S in the province to ensure improved HCWM in the long term. This will happen through the development of OH&S services and structures in health facilities and a provincial programme of reporting, training and support services. A Waste Specialist at the province will build the waste component of the OH&S programme. The Waste Specialist will also help bridge the role of OH&S in relation to environmental health where presently a greater role is being played in health care waste management.

### ***Reporting on health care waste***

There is presently no reporting on either OH&S or environmental health in the DoH. The award of a new service contract for health care risk waste provides an opportunity for the Department of Health to review it's own role in the management of risk waste in the province.

The National Integrated Waste Management Strategy demands improved standards around the management of waste streams. DACEL (Department of Agriculture Conservation Environment and Land Affairs) is preparing to introduce new HCW Regulations that will require the generators of health care waste to register and prepare Waste Management Plans.

The Waste Specialist will be able to ensure that reporting systems are developed that ensure annual DoH Waste Reports and that this reporting system is integrated into existing DoH information streams.

### **Scope of work of the Waste Specialist**

The post of the waste specialist requires understanding all the waste streams generated at the health facility. The *Draft Guidelines on Sustainable Health Care Waste Management in Gauteng* identifies two major waste streams in a health facility. These are:

- health care general waste
- health care risk waste

There are also a number of smaller more specialist waste streams such as the disposal of expired drugs, chemicals and disposal of radioactive materials. The Waste Specialist will facilitate improvements to the management of all waste streams in health facilities.

The Waste Specialist will also be responsible for the introduction of environmentally friendly practices in health facilities such as recycling, waste minimisation and green procurement. The Waste Specialist will also identify cost savings for the Gauteng Department of Health with regard to waste and establish waste targets.

### **Key outputs of the Waste Specialist**

To facilitate the improved management of health care waste through:

1. To ensure the GDoH is legally compliant.
2. To establish provincial reporting for HCWM
3. To ensure contract monitoring
4. To support sustainable management systems for improved HCWM in health facilities
5. To ensure training
6. To communicate with all role players about improved HCWM

Supporting outputs of the key outputs for the HCW Officer

1. To ensure the GDoH is legally compliant
  - 1.1 Inform all levels of DoH management about the requirements of OH&S legislation and environmental legislation and other relevant codes and guidelines with regard to HCWM.
2. To establish provincial reporting for HCWM
  - 2.1 To support ongoing performance monitoring in provincial health facilities
  - 2.2 To ensure external audits are conducted by regional EHPs
  - 2.3 To establish a system to capture critical data at the province
  - 2.4 To integrate waste reporting with OH&S reporting

- 2.5 To liase with DACEL with regard to the HCWIS
- 2.6 To provide a DoH annual report on health care waste

3. To ensure contract monitoring

- 3.1 Liase with all contract holders and service providers
- 3.2 To alert the DoH to contract defaulters
- 3.3 To collect information as necessary from service providers to support provincial reporting
- 3.4 Facilitate approvals for training programmes and print and other training materials as per contract

4. To support sustainable management systems for improved HCWM in health facilities and the province

- 4.1 Ensure policy is developed to support improved HCWM in provincial health facilities
- 4.2 To network and support HCW Officers
- 4.3 To support developments in OH&S for better waste management
- 4.4 Establish a DoH programme of incentives

5. To ensure training

- 5.1 To liase with Human Resource Development (HRD) to ensure training provisions
- 5.2 To liase with training providers
- 5.3 To liase with the Institute for Waste Management
- 5.4 To support waste related training in OH&S

6. To communicate with all role players about improved HCWM

- 6.1 To report regularly to the GDoH HCWM Committee
- 6.2 To present to senior DoH management about health care waste as necessary

**Appointment of Waste Specialist**

It is envisaged that the waste specialist is a full time contract position two/three years after which the post will be evaluated and reassessed. For the long term functions of the Waste Specialist can be integrated into existing directorates in the DoH. For example, training once fully established is the direct responsibility of HRD, a basic reporting system should from part of OH&S reporting.

The post can be filled in any of the following ways:

- Creation of a new contract position in environmental health/OH&S
- Appointment of new person to contract post
- Secondment of DoH staff to post
- Outsource the responsibilities completely

### **Reporting Structure**

The Waste Specialist must report to environmental health and occupational health and safety. This will ensure access to all role players and will help secure the long-term sustainability of health care waste management in OH&S. The level of appointment is not prescribed because it will be determined by the method of appointment described in the paragraph above.

### **Background and qualities of the Waste Specialist**

The Waste Specialist is required to have a strong technical or environmental health background. Familiarity with the management of waste streams is essential. The ideal candidate will also be familiar with environmental and occupational health and safety legislation. Knowledge and/or experience of auditing and reporting systems are an advantage.

The Waste Specialist is required to work in multi-disciplinary teams. It is essential that he/she have excellent communication skills. He/she will have leadership skills and will be a strategic thinker. He/she must be self-motivated.



## **Appendix 3: Outline for the Health Care Waste Management Course**

### **Background**

The development of the Health Care Waste Management (HCWM) course forms part of the capacity building recommendations for the Gauteng Sustainable Health Care Waste Project. The course is the first of its kind. There are no other health care waste management training programmes in Gauteng.

The two pilot site survey reports from Leratong Hospital and Itireleng Clinic found that there are serious performance gaps in the present health care waste system in public health facilities. A capacity building plan is being implemented at the two pilot sites to address these performance gaps. This plan includes the designation of a Health Care Waste (HCW) Officer in the absence of a dedicated full time Safety Health and Environment Co-ordinator to help facilitate the successful management of all components of the waste system. It also includes external audits conducted by Environmental Health Practitioners (EHPs) from the Department of Health (DoH) Region.

In addition to the capacity building plan being implemented at the pilot sites it is recommended that the new tender specifications for the next health care risk waste contract for the Gauteng DoH will include training specifications for the first time. This means that service providers will be contracted to provide a training and advisory service for health facilities from October 2003.

The HCWM course will provide training for newly appointed HCW Officers, for Regional EHPs required to conduct hospital inspections and for service provider staff contracted to offer advice, training and support to health facilities. The HCWM course is to be developed as a pilot in 2003 and then modified once the evaluation is complete.

### **Purpose**

The purpose of the course is to provide an introduction to the cradle to grave management of health care waste streams for health workers who facilitate the management of health care waste and for private contractors who provide a health care waste service to health facilities.

### **Target group for training**

It is planned that the HCWM programme will meet the needs of three groups of people in the pilot phase:

- Newly appointed HCW officers and Assistant HCW officers working in public hospitals and community health centres in Gauteng
- Regional EHPs who are required to conduct hospital inspections
- Trainers and consultants working for private contractors providing a service in health care waste.

Of these groups of people the newly appointed HCW officers are the largest participant group. Eighty HCW officers and assistants from Gauteng DoH hospitals and clinics and 6 regional EHPs will be designated and released for training in 2003. At present it is unknown whether any service provider staff will attend the HCWM training programme in 2003.

### **Background of participants**

A circular from the DoH to advise the designation of HCW Officers will propose that candidates for the position of HCW officer and his/her assistant are people who are already involved in waste management. Most often these individuals are from infection control, occupational health and safety or senior staff from the cleaning department. Most often they are likely to have a post-matric qualification, but no specialist training in health care waste management. EHPs are familiar with the concept of waste management but have no specialist training in health care waste or auditing.

At present trainers working for service providers do not attend any specialist HCWM training. Trainers have a wide background that can include medical training. Presentation skills are gained from groups such as Toast Masters.

Entry level for the HCWM course in the pilot phase will be matric plus three years tertiary study.

### **Length of training programme**

It is proposed that the HCWM training programme will be for 5 days. However these 5 days may be facilitated over two weeks to allow participants to carry out a practical assignment in their workplace.

### **Competencies**

The role of the Health Care Waste Officer is described in the terms of reference included with this document. The key competencies are categorised under the following two headings; critical information and applied skills.

#### Critical information

- Know all waste streams in a health facility
- Understand the cradle to grave concept of waste management
- Know relevant aspects of Occupational Health and Safety Legislation and any other relevant codes of practice
- Understand waste minimisation and recycling in health facilities
- Know about best/improved practice in health care waste management
- Know about training methods for health care waste management
- Know about awareness activities for health care waste management
- Know about the value of external audits

### Applied skills

- Communication skills to all levels of workers in health facilities including management
- Presentation skills
- Prepare short reports about waste for the Occupational Health and Safety Committee and hospital management
- Know how to implement policy and procedures
- Know how to monitor service agreements with service providers
- Conduct internal performance monitoring
- Know the procedures to report incidents and problems
- Problem solving

Whilst all participants will benefit from the competencies listed above the EHP conducting external audits will need to be especially familiar with auditing procedures and checklists. Participants from the service provider would need time to consider training methods and programmes. The curriculum of the HCWM training programme will be flexible to encourage participants to focus on their specific needs.

### **Learning outcomes**

The following preliminary learning outcomes and supportive tasks are identified for the HCWM course.

#### **1. Maintain HCWM standards**

- Demonstrate knowledge of OH&S ACT and other relevant codes of practice
- Demonstrate familiarity with code of practice book for HCWM in health facilities
- Know how to implement relevant policies and procedures
- Demonstrate knowledge of waste minimisation and recycling in health facilities

#### **2. Obtain commitment to improved HCWM at all levels**

- Give a presentation about improved HCWM
- Facilitate a short meeting about HCWM

#### **3. Communicate to all role players about improved HCWM**

- Prepare a short report about HCWM
- Present a short training session on HCWM using visual aids
- Demonstrate knowledge of cascade training
- Prepare an action plan for an HCWM awareness activity

#### **4. Monitor HCWM on a regular basis**

- Complete internal performance monitoring checklists
- Complete external auditing forms and checklists
- Identify HCWM problems from checklists and audit forms

- Demonstrate knowledge of service contracts
- Complete an incident investigation form
- Develop a plan of action to solve a HCWM problem

### **Assessment**

The type of assessment to be applied to this course will be determined by a more detailed consideration of the curriculum. However it will include an assessment of the learning process as well as evidence of learning achievements. The latter will take into consideration the educational background of candidates and teaching resources to support assessment. Learning achievements can be assessed using many different tools such as written exercises, oral tests or interviews and project work. If possible, assessment will be continuous. This means assessment will take place during and at the end of the training

### **Accreditation**

Accreditation of the course will be from three potential sources. The training provider may be able to accredit the course, the relevant Sector Education and Training Authority (SETA) and the Institute for Waste Management in Southern Africa (IWMSA). In the absence of full SETA accreditation then provisional accreditation will be applied for in the pilot phase.

### **Recommendation for training provider**

The main providers of environmental health and occupational health and safety training in the province are the Technikons. Environmental health training is offered at Technikon Witwatersrand and Pretoria. Technikon SA offers a National Diploma in Safety Management (NADSAM). This is a three-year distance learning programme. Some private practitioners also provide training expertise for the public sector and private waste contractors.

It is recommended that a Technikon should be approached to collaborate with the Gauteng Sustainable Health Care Waste Management Project to develop and pilot the HCWM training course. However should a Technikon be contracted to run the course for the pilot phase it will be on the understanding that the course materials are the intellectual property of the Gauteng Sustainable Health Care Waste Project and that other training providers could also apply to run the course in the long term.

The final choice of service provider for the pilot period will be in keeping with DoH regulations with regard to the appointment of a training provider.

### **Timeframes**

The Gauteng DoH undertook in November 2002 to designate HCW Officers at all health facilities. Therefore it is expected that two HCWM courses can run during August-November 2003 to train HCW Officers, EHPs and service provider staff in preparation

for the roll out of the improved HCWM system in December 2003. Curriculum development and materials development will happen December to July.

### **Budget**

The Gauteng Sustainable Health Care Waste Management Project undertakes to pay for a 5-day training programme for designated HCW Officers and 6 EHPs from Gauteng DoH. Approximately R200 000.00 is available for the development of course materials and for training costs.

### **Challenges**

#### *Buy-in and curriculum development*

This is a new training programme therefore establishing buy-in is important. Gauteng DoH has committed itself to the pilot training programme and will release staff to attend the training programme. Once the DoH has confirmed a training provider then the service providers will be approached to obtain their participation. However the Gauteng Sustainable Health Care Waste Management Project can not fund participants from the service providers. The service providers will be invited to contribute to curriculum development. HCW Officers from the pilot sites and members of the DoH HCWM forum will also contribute to curriculum development.

#### *Long term sustainability*

Once the pilot training is complete then the course will be revised as necessary. A recommendation is already made to GDoH that the course be integrated into DoH training schedules from 2004 and that funds be made available by the DoH to train HCW Officers and other staff with responsibility for waste management as necessary from 2004.

For long term sustainability the course should also be marketed to private waste contractors and private health care facilities through the training provider/s and through networking bodies such as IWMSA.

**Appendix 4: Budget for capacity building activities to be funded by the Gauteng Sustainable Health Care Waste Project**

<b>Capacity Building Element</b>	<b>Description</b>	<b>Activity</b>	<b>Budget</b>	<b>Subtotals</b>
<b>Regional Training Officers &amp; Assistants</b>	One week training	6 EHOs & 6 OHS	30 000,00	
		28 HCW Officers	70 000,00	
		28 HCW Assistants	70 000,00	
		13 Community Health Centres	32 500,00	
<b>Teaching Materials</b>	One week HCWM course	Support to preparation of curriculum	10 000,00	
		Edit of teaching materials	6 000,00	
		Design & Layout	6 000,00	
		Printing	2 000,00	
<b>Roll out</b>	GDoH HCWM Committee	Planning workshops 3 days	20 000,00	
		Audit of Policies	20 000,00	
				<b>40 000,00</b>
		<b>TOTAL</b>	<b>266 500,00</b>	

