

**AGRICULTURE, CONSERVATION
ENVIRONMENT & LAND AFFAIRS**

**SUSTAINABLE HEALTH CARE WASTE MANAGEMENT
STRATEGY FOR GAUTENG**

**Mark's Park, Johannesburg
27 November 2001**

**Stakeholder Consultation on the Draft Health Care Waste
Management Policy and the Draft Framework for a Health Care
Waste Information System for Gauteng**

Workshop Proceedings

**HOSTED BY
THE DIRECTORATE OF ENVIRONMENT**

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**GAUTENG DEPARTMENT OF AGRICULTURE,
CONSERVATION,
ENVIRONMENT AND LAND AFFAIRS**

**Stakeholder Workshop on the Gauteng Health Care Waste Management
Policy and Health Care Waste Information System
held on Tuesday, 27 November 2001, at Marks Park, Johannesburg**

EXECUTIVE SUMMARY

- The workshop was the second in a series of workshops planned for the development of the Gauteng Health Care Waste (HCW) Management Policy. The first Workshop was held on 15 May 2000 for the purpose of developing a process to reach the goal of sustainable HCW management in Gauteng.
- Draft documents tabled at the workshop for stakeholder input and comment were the "Policy for Environmentally Sustainable Health Care Waste Management in Gauteng Province" and the "Framework Document for the Health Care Waste Information System" (HCWIS). The documents were made available to registered participants by email before the workshop.
- Stakeholders were encouraged to study the documents distributed by email prior to the workshop and, in addition to participation in the workshop discussions, also to submit written comments and suggestions to the Gauteng Department of Agriculture, Conservation, Environment and Land Affairs before 01 February 2002.

The Gauteng HCW management policy was presented for discussion:

- It is envisaged that the Gauteng HCW management policy will form part of the basis for a national HCW management policy, as the Gauteng HCW management project is considered to be a large-scale pilot project for South Africa (SA).
- The draft HCW management policy will be applied by the Gauteng Department of Agriculture, Conservation, Environment and Land Affairs (GDACEL) as an interim policy until a final policy and the final HCW Management Strategy and Action Plan have been published.
- Policy implementation will be achieved through a phased approach.
- Selected pilot projects will be implemented to develop and test changes to the HCW management system
- These will be followed by the development of strategy and action plans
- Detailed HCW guidelines will be developed at a later stage of the project
- The Policy will initially focus on major generators of Health Care Risk Waste (HCRW) in Gauteng - hospitals, clinics and blood transfusion services etc.
- Containerisation and storage of HCRW will be improved, thus reducing the health and safety risks to personnel and pollution risks to the environment.
- 'Green procurement' for medical waste supplies would be a priority
- Improved segregation into the different HCW categories will significantly reduce the HCRW stream that requires treatment.
- Centralized (regional) HCRW treatment facilities will be promoted
- Technologies used will be required to meet more stringent environmental and occupational health and safety requirements in Gauteng
- A licensing/permitting system will be established for all HCRW service providers
- The Policy will be supported by appropriate provincial legislation, that may at a later stage be lifted to a national level



- Service providers will have to demonstrate compliance with the new treatment standards by 1 January 2004 to continue operation.

Key issues arising out of the discussion of the HCRW Policy Document:

- Although the pharmaceutical industry is classified as a minor generator of HCRW, the potential negative impacts on both human and environmental health of incorrect disposal of these wastes was felt to be such that the industry needed to be prioritised.
- Some form of monitoring of dioxins was seen as being essential as South Africa is a signatory to the Persistent Organic Pollutants (POP) Convention, but care should be exercised before introducing legislation with wide-ranging implications
- The need for synchronisation in legislation was identified
- Effective enforcement of legislation was also considered to be very important
- Radioactive wastes are to be included in the project as there is a need for radioactive waste to be screened out of the waste stream for safe disposal before treatment of the HCRW
- 'Green procurement' was seen as a positive step, but the general consensus was that it should not be legislated at this stage
- Standardized containers for HCW were suggested, with internationally recognized colour coding
- Off-site treatment was seen to be more cost-effective
- It was suggested that control of the effectiveness of non-burn treatment methods be exercised by frequent (batch) monitoring
- Independent auditing of treatment facilities was suggested
- The impact of the AIDS epidemic on amounts of HCRW was an issue raised
- Training of health care personnel in waste segregation was seen as a key factor - a change in attitude leading to changed behaviour was required
- Training should be undertaken at all corporate levels
- "Cradle to grave" HCW management is needed - the need for verifiable waste audit trails was a key factor identified
- Legislation was seen as essential to the success of the HCW Management Policy
- Timeframes for implementation were seen to be realistic. Some aspects could be implemented more quickly

The Health Care Waste Information System was presented for discussion:

- Only urgently needed data would be collected
- There would only be one category of HCRW
- Accurate data on the tonnage of waste would be needed, not numbers of containers
- Generators and transporters should keep records of the mass of health care risk waste collected - the mass would be determined once only
- Monthly reporting of some data would be required, annual reporting of other data
- Major generators would be identified and smaller generators grouped by region
- Transporters, treatment plants (off and on site) and HCRW generators (initially only the larger ones) would be required to be registered with DACEL
- Testing of the HCWIS through pilot projects would take place before implementation

Key issues arising out of the discussion of the Health Care Waste Information System:

- The purpose of the data collected was seen as being a key issue - it must be useful for improving the HCW management system
- Legislation was seen as necessary for the success of the HCWIS
- Verification of data was seen as being of primary importance, in order to provide a Waste Audit Trail - possible use of the Manifest System was suggested

- Confidentiality of data could be an issue, but in general it was felt that data should be freely available
- Reporting could be a mandatory requirement for licensing purposes
- It was suggested that data capture should be done electronically and on standardized templates

1. OPENING AND INTRODUCTION:

Joanne Yawitch, Chief Director Conservation and Environment of Gauteng Department of Agriculture, Conservation, Environment and Land Affairs (GDACEL), welcomed everyone present and thanked them for taking the time to attend.

This workshop was the second in a series of workshops planned for the development of the Gauteng Health Care Waste (HCW) Management Policy. The project is being undertaken with financial assistance from the Danish Co-operation for Environment and Development (DANCED), with RAMBØLL as the appointed lead consultant. It is envisaged that elements from the resulting policy document will be used in HCW management nationally. The draft Policy Document and Health Care Waste Information System (HCWIS) discussion document were tabled at the workshop and comments and input were needed from stakeholders on the documents. Ms Yawitch also encouraged stakeholders who had not yet studied the documents in detail to submit written comments to GDACEL. The draft Policy document had also been submitted to the Provincial Cabinet and was approved for release for public comment and input.

The structure for the workshop was as follows:

- Presentations outlining the aim and purpose of the workshop and providing a summarized discussion of the HCW Management Policy
- Opportunity for questions and feedback
- Morning breakaway session for group discussion of different aspects of the HCW Management Policy
- Morning plenary session to report back on issues raised in the different groups regarding the HCW Management Policy
- Presentation of the Health Care Waste Information System (HCWIS) Framework Document
- Opportunity for questions and feedback
- Afternoon breakaway session for group discussion of different aspects of the HCWIS
- Afternoon plenary session to report back on issues raised in the different groups regarding the HCWIS
- Presentation on the way forward and closure.

2. AIM AND PURPOSE OF THE WORKSHOP AND STRATEGY DEVELOPMENT PROCESS:


Ms Yawitch introduced Dr Dhiraj Rama, Director Environment DACEL, who outlined the aim and purpose of the workshop as well as the development process for the overall HCW management strategy for Gauteng.

Historically, Health Care Risk Waste (HCRW) has often been disposed of in an illegal manner that resulted in health and environmental risks. In order to address the situation and implement a sustainable Health Care Waste Management Strategy (of which the Policy is one component), GDACEL had begun the design process for the present project in 2000. A Status Quo Study was published in November 2000 and the two-year project began in May 2001.

Timeframes for the project are indicated in Table 1 below:

Table 1 : Strategy Development Process

Activity	2000: Status quo phase	2001 Strategy and action plan phase	2002 Pilot and tender doc. phase plan phase	2003
Status quo report	██████████			
Strategy & Action Plans, feasibil. study		██████████		
Guidelines			██████████	
Pilot study			██████████	
Technical specific. & tender materials			██████████	██████████
Instit. arrangements	
CapBuild Program.			██████████	██████████

Gauteng Department of Agriculture, Conservation, Environment and Land Affairs 

➤ **The main outputs of the project will be:**

- HCW Management Policy
- HCW Strategy and Action Plans
- HCW Management Guidelines
- Feasibility Study for HCW Management Scenarios
- HCW Information System
- Pilot projects at two health care institutions
- Technical specifications and tender documentation for provincial tenders for outsourcing of HCW Services.
- Southern African Conference on HCW management

➤ **Background to the Policy:**

- There is a lack of national guidance for standards of HCW management
- There is a need for clear guidance to generators and the industry as to the Province's policy for HCW management
- The Draft HCW Management Policy was presented to and approved by the Gauteng Provincial Cabinet on 21 November 2001
- The current version of the Policy is intended as a draft document only and is to be further consulted and developed into a final HCW Management Policy for Gauteng
- The Policy shall inform the development of detailed HCW Management Strategy and Action Plans as well as DACEL's management of HCW issues.

➤ **Background of the HCW Information System (HCWIS):**

- There is currently no reliable data capturing for HCRW
- A number of critical incidents have highlighted the need for reliable data collection
- There is a lack of national guidance for waste data capturing
- Authorities must have reliable data on trends of HCRW quantities to plan and monitor the availability of permitted treatment capacity and to make well informed State of Environment Reporting possible
- The HCWIS for Gauteng will be a possible pilot for a general Waste Information System



3. PRESENTATION OF THE HEALTH CARE WASTE MANAGEMENT POLICY:

The draft HCW Management Policy document was presented in summary form by Ms Dee Fischer, Deputy Director Integrated Waste Management, GDACEL.

- Gauteng is a highly industrialized, and a densely populated province, which requires Gauteng-specific environmental protection measures
- The Gauteng Provincial Government (GPG) is moving to increase standards of HCRW management which will in turn influence and set a precedent for implementation in other waste streams in the future
- The Policy suggests minimum requirements for HCRW management which are Gauteng-specific
- The Policy will be supported by provincial legislation
- Replicable components of the management system will be identified for national implementation where applicable, as supported by the memorandum of understanding signed by DACEL and the Department of Environmental Affairs and Tourism (DEAT)

➤ Policy development:

- This Policy represents a starting point for consultation on the HCRW Management System
- It has been fully endorsed, and is supported by the Gauteng Provincial Cabinet
- The Policy responds to the following legislation:
 - The South African Constitution
 - National Environmental Management Act (NEMA)
 - National Waste Management Strategy (NWMS)
 - White paper on Integrated Pollution and Waste Management
- The Policy addresses the complete life cycle of HCRW from generation through segregation, transport and treatment to disposal.

➤ Project partners:

The project is a joint development process with the following policy partners:

- Gauteng Department of Health (GDoH), Gauteng Department of Transport and Public Works (GDTPW)(provincial)
- National Department of Health (NDoH), Department of Environmental Affairs and Tourism (DEAT), Department of Water Affairs and Forestry (DWAF) (national)
- Danish Co-operation for Environment and Development (DANCED)
- Infection Control Association of Southern Africa (ICASA)
- South African Non-Governmental Organisation Council (SANGOCO), South African National Civics Organisation (SANCO)
- National Education Health Allied Workers Union (NEHAWU)
- SA Society of Occupational Medicines (SASOM)
- South African Bureau of Standards (SABS)
- Gauteng Association of Local Authorities (GALA)

➤ Overall vision of the policy:

- To establish integrated, environmentally sustainable and occupationally healthy and safe HCW management in Gauteng, and to ensure that this is done within the framework and principles of the NWMS, covering the full health care waste stream
- This will be achieved through a phased approach

- The policy will be followed by a detailed strategy and action plans
- These will be supported by detailed guidelines for the full spectrum of HCW management and will act as a practical tool for implementation

➤ **Policy aim and methodology:**

- Aim
 - To improve the quality of the environment by ensuring pollution prevention
 - To address both the environmental and occupational aspects of the management system
 - To provide guidance to HCW generators and service providers
- Methodology
 - 12 problem categories were identified
 - The problems were transformed into a set of needs
 - The needs were transformed into a set of interim minimum requirements for HCRW management

➤ **Definition of HCRW:**

- **Infectious waste:** All kinds of waste that is likely to contain pathogenic micro-organisms
- **Pathological waste:** Includes parts that are sectioned from a body
- **Sharps:** Includes sharp and pricking objects that may cause injury as well as infection
- **Chemical waste:** Includes all kinds of discarded chemicals, including pharmaceuticals, that pose a special risk to human health and environment
- **Radioactive waste:** This includes solid, liquid and gaseous waste contaminated with radionuclides.

➤ **HCRW Generators:**

The definition of HCRW generators goes beyond typical health care institutions. Please refer to Table 2.

➤ **HCRW problems identified in Gauteng:**

- Awareness and training
- Segregation of types of HCW
- Internal HCW management equipment
- Tendering and contracting
- Safety and health
- Storage of HCW
- Transportation of HCW
- Record-keeping and reporting
- Treatment facilities
- Disposal of residues
- Enforcement, permitting and monitoring
- Inadequate capacity of public agencies

➤ **Needs identified for the HCRW management system:**

- Environmental needs
- Occupational health and safety needs
- Organisational needs

- Equipment and technical needs
- Financial needs
- Legislative needs
- Information and awareness needs
- Public health needs

Table 2 : HCRW Generators

Major Generators (90% of HCRW stream in Gauteng)	Minor Generators (10% of HCRW stream in Gauteng)
<p>Major Generators (600 sources) Greater than 10kg HCRW per day</p> <p>Hospitals: Owned and operated by provincial government, the private sector, the defence force and mines.</p> <p>Clinics: Owned and operated by provincial government, local government, the private sector and industries' including day-care clinics.</p> <p>Blood transfusion services: Blood banks and their associated laboratories.</p>	<p>Minor Generators (9700 sources) Less than 10kg of HCRW per day</p> <p>Laboratories: Private and public pathology laboratories as well as research laboratories.</p> <p>Pharmaceutical industry: Pharmaceutical manufacturers and outlets.</p> <p>Health care practitioners: Doctors, dentists, specialists and allied practitioners like acupuncturists, chiropractors and various therapists etc.</p> <p>Veterinary Services: Veterinary hospitals and veterinary surgeons.</p> <p>Specialised institutions: Psychiatric hospitals, rehabilitation centres, prisons, old age homes, hospices, mortuaries</p> <p>Private homes: Private health care treatment, domestic health care, home nursing.</p>

➤ **Priorities:**

- Stakeholder input into the HCW management problem solving process is needed
- To address major generators first (90% of waste stream)
- To improve containerization and hence reduce risks
- To improve segregation of different HCW categories to reduce the HCRW stream that requires treatment
- To apply the polluter pays principle, which takes into account emissions to the environment
- To move towards cost recovery through authorization and monitoring
- To encourage outsourcing of HCRW treatment for public institutions
- To encourage joint management of HCW by all tiers of government
- To develop and implement HCW information systems

➤ **Interim HCW management requirements:**

- These requirements will represent the minimum Gauteng requirement for HCW management. They will be used until the Strategy and Action Plans are developed and also for the following purposes:
 - Planning
 - Authorizing treatment applications
 - Decision making purposes

➤ **Green procurement, waste minimization and recycling:**

- GPG will encourage 'green procurement' in public institutions, and will control compliance through the tendering procedure for HCW management
- GPG will encourage 'green procurement' in the private sector through leading by example
- Waste minimization will be encouraged *inter alia* through improved waste segregation at source
- Recycling of suitable materials will be encouraged where practical

➤ **Environmental Minimum Requirements - burn and non-burn technologies:**

- Technologies will be assessed according to environmental and occupational health and safety performance requirements
- GPG will ensure that facilities meet requirements by setting tender specifications for provincial health care facilities which will promote compliance, thereby addressing 50% of the HCRW stream
- Existing treatment facilities will be upgraded to meet set standards or will be decommissioned as alternative acceptable treatment capacity is created
- GPG will put in place legislative means to ensure clear requirements for all operating treatment facilities and licensing/permitting of service providers
- GPG will endeavour to ensure adequate training of staff responsible for handling of HCRW
- GPG will ensure that HCRW treatment facilities meet the regulated Gauteng minimum requirements for environmental impact
- GPG will enforce the existing national legislation as well as new provincial policies and legislation

➤ **Interim Occupation Health and Safety Minimum Requirements:**

- ***This section does not intend to in any way supersede the requirements of the Occupational Health and Safety Act***
- Minimum requirements will be set for waste handling equipment to be used at public institutions
- HCW management guidelines for segregation, collection, transport, treatment and disposal will be developed
- Occupational Health and Safety (OHS) requirements will be incorporated into the provincial HCW tender specifications
- OHS requirements will be incorporated into authorization conditions for treatment facilities
- Compulsory technical competence certificates for key personnel operating HCW transportation and treatment facilities will be introduced in the longer term

➤ **Minimum Requirements for Segregation and Containerization:**

- All HCW will be sorted at source
- The maximum allowable manual lifting mass of containers will be 15kg
- Manual handling and lifting as well as the number of transfers shall be minimized by use of trolleys, wheeled bins or similar mechanisms
- Provision will be made for waste collection receptacles of appropriate design for anatomical waste, infectious waste and sharps
- Provision will be made for transportation equipment appropriately designed for internal transportation of waste

➤ **Minimum Requirements for Colour Coding and Labelling Systems:**

- Until a national colour coding system for HCW is in place the following will be applied in Gauteng:
 - Red heavy duty plastic bags/inner linings
 - Sharps – preferably red or with significant red markings or alternatively yellow tamper proof, puncture proof and spill proof containers with indicators for the maximum fill levels
 - For general HCW any other colour besides red or yellow can be used, preference should be given to black, grey or transparent

• □ **Labelling:**

- International ISO biohazard symbol must be used
- Text must clearly identify the contents as HCRW/infectious waste/medical waste/clinical waste
- The content of bags will be indicated by the use of colour only
- Labelling must include the category, date, name of health care institution and, if required, identification of the department

➤ **Minimum Requirement for Internal Collection and Storage:**

- Collection of HCRW must take place from the point of generation
- After collection from the wards, waste must be stored in a lockable central storage facility
- No un-authorized access to the waste should be permitted
- Waste should not be handled by staff unless it is containerized
- The required personal protective equipment (PPE) must be worn when handling waste
- Internal transport between points of generation:
 - Safe transportation will be facilitated by the use of properly designed trolleys
 - No loading higher than the designed level should be allowed

➤ **Minimum Requirements for Non-Burn Technologies:**

- Until new national emission standards have been enacted, the DEAT Emission Guidelines will be complied to by all proposed new HCRW thermal treatment facilities in Gauteng (an immediate requirement)
- A program to upgrade existing facilities will be developed and agreed upon. This should be implemented as soon as is practically possible
- The permit holder must document compliance by the use of a combination of independent emission tests and on-line monitoring to be prescribed by DACEL as part of this project

- A standard frequency of tests will be required. The frequency of monitoring could be reduced if a compliant track record is established, but will be increased if compliance is poor
- Filters to prevent emissions of any pathogens via outlets must be maintained, replaced regularly and actions documented
- Microbial inactivity for bacteria, fungi, viruses, parasites and mycobacteria will be greater or equal to a 6 log 10 reduction
- For B. Subtilis spores, a reduction greater or equal to 4 log 10 will be required
- Representative biological indicators as described in the United States Environmental Protection Agency Technical Assistance Manual will be required
- The authorized treatment facility permit holder must document compliance and microbial inactivity by the use of a combination of independent tests to be approved by DACEL
- Disposal of residue will conform to DWAF Minimum Requirements for the Handling, Classification and Disposal of Hazardous Waste, or be land-filled at a general waste site deemed appropriate by DWAF

➤ **Organizational and Institutional Minimum Requirements:**

- For the duration of the project a provincial committee should be established to co-ordinate HCW management activities
- The GPG will introduce effective measures to avoid transport of HCRW in or out of the province motivated by differences in environmental standards (levies/disincentives)
- Permitted facilities in Gauteng will only treat HCRW from other provinces if sufficient spare treatment capacity exists in Gauteng

➤ **Minimum Requirements for Regulation and Guidelines:**

- Existing un-licensed/permitted HCRW treatment facilities in Gauteng must apply for permitting. However, siting will in general be assumed to be acceptable after a dispersion model has been undertaken for burn-technologies
- Existing un-licensed/permitted or temporarily licensed/permitted treatment facilities that do not comply with existing environmental requirements must submit an EIA application and commit to achieving compliance over a maximum period of 18 months after review. If compliance cannot be achieved within that period the operations must be stopped
- As from the 1st January 2004 all HCRW treatment facilities must be in compliance. Any facility not in compliance on or after 1st January 2004 will need to stop operations until such time as compliance can be documented

➤ **New regulations:**

Provisions will be made for:

- Lifting the current DEAT emission guidelines to an actual minimum requirement for Gauteng
- Establishment of microbial inactivation standards for non-burn technologies
- Implementation of a HCWIS where all HCRW service providers will report in a prescribed format
- Establishing a licensing system for all HCRW service providers
- Determining penalty systems including provision for cost recovery for inspections and handling of authorization applications
- Guidelines will be developed and published to assist health care facilities and service providers to improve standards and performance services

➤ **Minimum Requirements for Reporting and Record-keeping:**

- Reporting will be required from all waste sectors
- Weighing of waste will be required,
- Annual reports in a prescribed format will be required
- All major HCW generators will be required to keep records of waste generated

➤ **Minimum Requirements for Information and Training:**

- The project will provide guidelines that increase the awareness of both health care facilities and service providers
- Training packages and information material will be made available
- Training of on-site operators at provincial health care institutions will be provided to improve operations
- HCRW management training will be introduced into the curriculum of health care professional at provincial health care educational institutions

4. QUESTIONS ARISING FROM THE PRESENTATION:

Q. There was a query as to whether facilities which had been operational before the requirement for an Environmental Impact Assessment (EIA) was instituted were also required to conduct an EIA.

R. Ms Fischer replied in the affirmative.

Q. Reference was made to an incident in which medical waste had been dumped in Tembisa. The question of what action was being taken to prevent such incidents in the future was posed.

R. Mr Albert Marumo of the Department of Health reported that the particular incident at Tembisa occurred when a vehicle transporting blood samples was hijacked. The samples had allegedly been dumped by the vehicle thieves. A report on the incident was in the process of being prepared.

Q. The question of the maximum container load of 15kg was raised and whether this applied to larger medical waste containers as well.

R. This applied to a manual lifting weight of not more than 15kg only and not to larger containers which would be lifted mechanically, transported on wheels or similar.

Q. Mr Brian Thompson commented that it is important to legislate or otherwise motivate the substitution of undesirable compounds via 'green procurement' procedures etc as this is the most effective way to reduce emissions to the environment.

R. Green Procurement is being promoted in the Policy

Q. There was a query about pharmaceutical waste not being addressed in the Policy Document.

R. Pharmaceutical waste is addressed via the different treatment technologies' ability to treat such types of waste.

Q. The question of what long-term plans for policy enforcement were being made was raised.

R. It was envisaged that once a legislated Health Care Waste Information System had been set up that this would help provide the ability to monitor the HCRW stream, making enforcement of regulations easier.

Q. The issue of different types of HCRW treatment technologies not being suitable for all types of medical waste was raised. Was the policy clear on which types of waste were suitable for the different types of treatment equipment?

- R. The licence/permit issued to a facility would be specific to the types of waste that the particular treatment technology could document as being suitable. An EIA and treatment plan would be required.
- Q. The question of 'green procurement' and whether this would be compulsory for Local Authorities was raised.
- R. Two pilot projects looking into 'green procurement' at a Local Authority level would be initiated, but 'green procurement' is not required of Local Authorities at this stage.

5. BREAKAWAY GROUPS ON HEALTH CARE WASTE MANAGEMENT POLICY

Workshop participants were assigned to four different breakaway groups according to Table 3 below:

Table 3 : Morning breakaway groups

HEALTH CARE WASTE MANAGEMENT POLICY DISCUSSION GROUPS				
	GROUP 1	GROUP 2	GROUP 3	GROUP 4
Discussion issues	Issue 1: Environment, Legislation & Organisation	Issue 2: Internal HCWM, Training & Information	Issue 3: Transport & Treatment	Issue 4: Overall aspects of Policy
Facilitator	D. Fischer	G. Bothma	D. Rama	S. Nkosi
Scribe/ Advisor	N. Busch	K. Otto	D. Baldwin	T. Kristiansen
Reporter	Nominated by group	Nominated by group	Nominated by group	Nominated by group

Issues raised for discussion in the different groups are presented in Tables 4 to 7 below:

Table 4 : Discussion issues from morning breakaway session : Group 1

GROUP 1	FACILITATOR : D. FISCHER	ISSUE 1 : ENVIRONMENT, LEGISLATION & ORGANISATION
ISSUES/CONCERNS RAISED		SUGGESTED SOLUTIONS
Box 5.1 : Green procurement, waste minimisation and recycling:		
<ul style="list-style-type: none"> • Environmentally harmful materials in the waste stream are a problem with certain treatment types e.g. Polyvinyl chloride (PVC) with incineration; other problematical plastics 		<ul style="list-style-type: none"> • Choose non-burn treatment where PVC is present • A need for monitoring • Substitute environmentally harmful materials used in products as far as possible • Monitoring of dioxins needed as SA is a signatory to the POP Convention (See Box 5.9) • 'Green procurement' is a good thing, but should not be legislated
<ul style="list-style-type: none"> • Compliance of all incinerators with DEAT guidelines 		<ul style="list-style-type: none"> • A plan for compliance will be established by DACEL.



will be difficult to ensure	<ul style="list-style-type: none"> All incinerators must comply with the guidelines by 2004 or they will be shut down Need for clear tender specifications and performance contracts
<ul style="list-style-type: none"> Compliance will mean an increased cost for service providers 	<ul style="list-style-type: none"> Improved segregation can reduce costs
<ul style="list-style-type: none"> Fragmentation of legislation is a concern 	<ul style="list-style-type: none"> Synchronise the HCRW management policy with the National Health Bill Co-ordination between the DoH and DEAT in terms of legislation Look at implementing EU standards
<ul style="list-style-type: none"> Enforcement of legislation 	<ul style="list-style-type: none"> Legislation is important, but only legislate what can be enforced Provide financial incentives
<ul style="list-style-type: none"> Different standards for public and private sectors 	<ul style="list-style-type: none"> Equal standards for public and private sector
<ul style="list-style-type: none"> Radioactive waste in the HCRW stream can be a problem 	<ul style="list-style-type: none"> Radioactive waste needs to be screened out of the waste stream before treatment
<ul style="list-style-type: none"> "End of pipe" mindset still prevalent 	<ul style="list-style-type: none"> Move towards zero waste, best affordable practices
<ul style="list-style-type: none"> Top management not concerned about HCRW disposal 	<ul style="list-style-type: none"> Education at all levels from top management down
Box 5.2 Minimum requirements for treatment	
<ul style="list-style-type: none"> DEAT guidelines are difficult for some facilities to conform to 	<ul style="list-style-type: none"> This is so, but standards are set to rise DEAT will be tabling improved standards in March 2002
<ul style="list-style-type: none"> Timeframes for the implementing of the new DEAT guidelines unclear 	<ul style="list-style-type: none"> DEAT should publish a timetable for implementation of the new standards
Box 5.9-5.11 Minimum requirements for treatment : burn and non-burn	
<ul style="list-style-type: none"> The comparison between burn and non-burn technologies was felt not to be totally fair 	<ul style="list-style-type: none"> Must be looked into
<ul style="list-style-type: none"> Monitoring of dioxins is expensive and as yet there are no laboratories that can do the tests in South Africa 	<ul style="list-style-type: none"> No facilities as yet because of lack of demand for testing
<ul style="list-style-type: none"> Legislation regarding monitoring of dioxins lacking 	<ul style="list-style-type: none"> SA is a signatory to the POP convention and must therefore develop legislation to monitor dioxins Monitoring should include stack emissions and also ash monitoring
<ul style="list-style-type: none"> Monitoring of transporters and treatment service providers needed 	<ul style="list-style-type: none"> Environmental management systems for transporters and treatment providers could be required, including annual auditing besides the current monitoring based on the permits DACEL conducted a feasibility study into the regionalisation of treatment facilities as small on-site treatment facilities will probably not be able to meet the new environmental standards
<ul style="list-style-type: none"> Emission Standards 	<ul style="list-style-type: none"> The group felt that instead of implementing the DEAT emission guidelines, Gauteng should implement the EU emission standards immediately
<ul style="list-style-type: none"> Timing of the Policy 	<ul style="list-style-type: none"> The group felt that 5 years was too long for implementing the emission requirements of the Policy
<ul style="list-style-type: none"> Ashes from incineration - should they be considered to be hazardous waste and disposed of at hazardous disposal sites? 	<ul style="list-style-type: none">
<ul style="list-style-type: none"> AIDS epidemic - what will this mean for amounts of HCRW generated? 	<ul style="list-style-type: none">

Table 5 : Discussion issues from morning breakaway session : Group 2

GROUP 2	FACILITATOR : G. BOTHMA	ISSUE 2: INTERNAL HCWM HANDLING, TRAINING & INFORMATION
ISSUES/CONCERNS RAISED		SUGGESTED SOLUTIONS
Box 5.6 and 5.7: Waste segregation, handling and colour coding		
<ul style="list-style-type: none"> SA is not making use of the WHO colour coding system for HCW containers 		<ul style="list-style-type: none"> The group felt this system should be adopted Yellow is easy to write on when containers are marked Care should be taken on the pollutants that may be emitted during incineration by certain colour pigments
<ul style="list-style-type: none"> Too many different types of containers leads to confusion and containers are often inappropriate for the types of waste e.g. sharps in plastic bags 		<ul style="list-style-type: none"> Standardisation of containers required and containers should be common to all types of waste treatment technologies Only provide puncture proof containers for sharps A different type of container for placentas Containers should be readily available at source of waste to prevent use of inappropriate containers
<ul style="list-style-type: none"> Laundries receive sharps amongst the linen 		<ul style="list-style-type: none"> The Policy must prescribe what is to be done in such instances
<ul style="list-style-type: none"> Negative impact of cytotoxic waste in the water system 		<ul style="list-style-type: none"> Suggested that cytotoxic waste be collected in purple bags
<ul style="list-style-type: none"> Pharmaceutical waste viewed as a big problem due to negative impacts on both humans and environment 		<ul style="list-style-type: none"> Pharmaceuticals need to be prioritised Product stewardship is required. Pharmaceutical manufacturers should take ownership of expired medicines, but if it is impractical to return drugs to overseas manufacturers, SA drug distributors should take ownership of the drugs The New Medicines Control Act is aimed at addressing this
<ul style="list-style-type: none"> Animal carcasses are a problem 		<ul style="list-style-type: none"> Guidelines on disposal of animal carcasses are needed - they are not allowed on landfills and incineration is often too costly
Training, awareness and information		
<ul style="list-style-type: none"> A number of different information systems already exist that are not adhered to e.g. immunisation records 		<ul style="list-style-type: none"> Focus should be on information systems vitally important for people's well-being
<ul style="list-style-type: none"> Training doesn't necessarily capacitate health care officials sufficiently to segregate health care waste effectively 		<ul style="list-style-type: none"> Reduce number of segregation categories and treat waste in accordance with the worst component. As this would increase treatment costs, it was felt that the costs of more effective training on segregation was justified Training materials should be generic and developed by a central department or organisation to make it affordable to the industry and avoid duplication Training materials could be posters, TV, pamphlets Training must be SA based and related to our society - World Health Organisation (WHO) training material could be ineffective because they are not specific to SA
<ul style="list-style-type: none"> High cost impact of poorly segregated HCW 		<ul style="list-style-type: none"> Educate health care staff about the increased treatment costs of poorly segregated waste Service providers could provide training specifically related to their particular product
<ul style="list-style-type: none"> Lack of awareness of impacts of poor HCW management practices 		<ul style="list-style-type: none"> More emphasis should be placed on the professional ethics associated with HCW management Articles in health care journals should raise awareness about this issue Training to be undertaken at all levels, both internally in health care facilities and externally in the curricula of health care professionals Awareness raising in schools and amongst community leaders
<ul style="list-style-type: none"> "Cradle to grave" HCW management 		<ul style="list-style-type: none"> HCW internal audit systems implemented and control



	<ul style="list-style-type: none"> exercised at a number of points in the process The term "Cradle to grave" could be replaced with the term "Conception to decay" HCW should be "risk managed" and not "crisis managed" as it is at present Smaller HCW generators e.g. general practitioners could be required to give proof of a sound HCW management programme before being registered with the Local Authority The American tracking system as proposed by the EPA could be looked at for HCW control and tracking
<ul style="list-style-type: none"> Timeframe and attainability of the policy requirements 	<ul style="list-style-type: none"> Although it was felt that the ultimate goal may never be reached, it was worth striving for improvement A definite timeframe should be set for implementation of the policy requirements Timeframe broken down into different activities/categories to make it more achievable

Table 6 : Discussion issues from morning breakaway session: Group 3

GROUP 3	FACILITATOR: D. RAMA	ISSUE 3 : TRANSPORT AND TREATMENT
ISSUES/CONCERNS RAISED		SUGGESTED SOLUTIONS
Box 5.8: Transport and treatment		
<ul style="list-style-type: none"> Effective segregation of HCW types 		<ul style="list-style-type: none"> Can take years to implement - requires a change in attitude/behaviour, not just training Long term strategy to move away from needles and rather use drips for administering of medicines
<ul style="list-style-type: none"> Unsuitable packaging leads to needle stick injuries 		<ul style="list-style-type: none"> Cardboard boxes not suitable as packaging for sharps. Have been banned in several countries as HCW containers Standardised packaging needed for HCW with recognised colour coding
<ul style="list-style-type: none"> Storage facilities 		<ul style="list-style-type: none"> Refrigeration is essential Freezers needed for body parts and highly putrescible waste e.g. placentas Double bagging and leak-proof containers for liquid waste Palletisation needed
<ul style="list-style-type: none"> Internal transport methods 		<ul style="list-style-type: none"> The design of trolleys in hospitals is very important - overloading must be addressed
<ul style="list-style-type: none"> Transport vehicles 		<ul style="list-style-type: none"> Need permitting of vehicles used to transport HCW Standardised markings on vehicles - dealt with in the Transport Act, Chapter 8 Increased security - some forms of HCW have value (used for "muti") System used by transport and treatment facilities must be complementary
<ul style="list-style-type: none"> Prohibitive costs of treatment 		<ul style="list-style-type: none"> Off-site treatment was felt to be more cost-effective
Box 5.9 to 5.11 : Treatment technologies - burn and non-burn methods		
<ul style="list-style-type: none"> Emission standards for burn technologies 		<ul style="list-style-type: none"> Some felt these were too stringent, others felt they are not stringent enough Less frequent emission monitoring was suggested Dioxins need monitoring - can be done less frequently if Chloride emissions are consistently low Emission standards are being revised - Gauteng DACEL is working with DEAT to influence permit conditions
<ul style="list-style-type: none"> PVC in waste stream a problem 		<ul style="list-style-type: none"> 'Green procurement' should be encouraged, but not legislated - it is impossible to eliminate PVC totally

	<ul style="list-style-type: none"> Hospitals should be encouraged to buy non-halogen containing supplies as this makes incineration much simpler
<ul style="list-style-type: none"> Overloading of incinerators leading to inefficient treatment and bad quality ash 	<ul style="list-style-type: none"> Treatment facilities should only operate for a maximum of 16 hours per day, not at night Ignitions loss < 5% by weight only for dry ash
<ul style="list-style-type: none"> Lack of information about different treatment technologies 	<ul style="list-style-type: none"> It was suggested that suppliers should hold a workshop where different technologies could be presented
<ul style="list-style-type: none"> Non-burn emission standards lacking 	<ul style="list-style-type: none"> Non-burn technologies need implementation of emission standards Measurement of volatiles needed High temperatures used in sterilisation can cause halogen/furin emissions
<ul style="list-style-type: none"> Effectiveness of non-burn treatment methods 	<ul style="list-style-type: none"> Frequent monitoring is needed - batch monitoring Testing of final product Monitoring during maintenance activities - artisans at risk Level 3 inactivation required Sampling method and technology needs evaluation and approval
<ul style="list-style-type: none"> Background data on receiving environment lacking leading to unsatisfactory EIA results 	<ul style="list-style-type: none"> It was felt that the State should collect background data on the receiving environment Studies on background levels have been started in certain localised areas in Gauteng
<ul style="list-style-type: none"> Standard operating procedures 	<ul style="list-style-type: none"> Standard operating procedures need to be in place for burn and non-burn technologies
<ul style="list-style-type: none"> Pharmaceutical waste a problem 	<ul style="list-style-type: none"> Needs to be handled as a specific waste - general incinerators are not suitable Chemical waste incinerators are needed
<ul style="list-style-type: none"> Radioactive waste 	<ul style="list-style-type: none"> Treatment facilities should monitor for radioactive waste at the treatment feed inlet This was easy on small containers, but bulk loads are not so easily screened
<ul style="list-style-type: none"> Monitoring of treatment facilities 	<ul style="list-style-type: none"> Auditing should be carried out by an independent auditor once a year and the report be submitted to DEAT Accredited laboratory must do the analytical procedures Routine testing must be done regularly Start-up procedure will require more frequent and stringent testing than routine operation Applicant could apply to have their monitoring frequency reduced on the basis of an excellent track record Audits should look at the waste management process as well as compliance
<ul style="list-style-type: none"> Obstacles to successful implementation of HCW management policy 	<ul style="list-style-type: none"> Costs Changing of behaviour patterns Many different technologies, systems and little interface between them No audit trail
<ul style="list-style-type: none"> Time frame for implementation 	<ul style="list-style-type: none"> Can be accomplished in 5 years with phased implementation Some aspects can be accomplished by 2004, especially if regionalisation/centralisation is introduced

Table 7 : Discussion issues from morning breakaway session : Group 4

GROUP 4	FACILITATOR : S. NKOSI	ISSUE 4 : OVERALL ASPECTS OF THE POLICY
ISSUES/CONCERNS RAISED		SUGGESTED SOLUTIONS
Aspects missing from Policy:		
<ul style="list-style-type: none"> Waste from abattoirs is not addressed 		<ul style="list-style-type: none"> The participant from KPMG will provide written input into the Policy to address types of waste not addressed
<ul style="list-style-type: none"> No national HCRW policy 		<ul style="list-style-type: none"> Gauteng Policy seen as a pilot for a future national Policy
<ul style="list-style-type: none"> Mechanisms for self-regulation 		<ul style="list-style-type: none"> Could be legislated
<ul style="list-style-type: none"> Roles and responsibilities of different stakeholders 		<ul style="list-style-type: none"> Authorities should be a "verifier" and not a "controller" DoH should be more involved and there should be co-operation between the different government departments Government should set a good example in HCW management
<ul style="list-style-type: none"> Methods for implementation 		<ul style="list-style-type: none"> Need to be addressed at a grass roots level
<ul style="list-style-type: none"> Enforcement 		<ul style="list-style-type: none"> Inspectors are needed
<ul style="list-style-type: none"> Definition of HCRW 		<ul style="list-style-type: none"> Should be addressed in more detail
<ul style="list-style-type: none"> Guidelines for particular problems e.g. radioactive waste 		<ul style="list-style-type: none"> Needs to be addressed
<ul style="list-style-type: none"> Does the policy take into account the Transportation Act? 		<ul style="list-style-type: none"> Work in co-operation with Dept of Transport to ensure driver competence and fitness
Obstacles to implementation:		
<ul style="list-style-type: none"> Implementation should be at a local level - the Policy does not sufficiently address how this should be done and how to get buy-in from stakeholders 		<ul style="list-style-type: none"> Needs to be addressed
<ul style="list-style-type: none"> Fragmented laws are difficult to understand 		<ul style="list-style-type: none"> A need for standardisation in the laws
<ul style="list-style-type: none"> Lack of technical competence in staff 		<ul style="list-style-type: none"> Government approved training courses needed Skilled operators must take responsibility for ensuring the competence of health care workers
<ul style="list-style-type: none"> Lack of capacity in Local Authorities is a problem 		<ul style="list-style-type: none"> Needs to be addressed
<ul style="list-style-type: none"> Shortage of accredited service providers 		<ul style="list-style-type: none"> Needs to be addressed
<ul style="list-style-type: none"> Financial obstacles a major problem 		<ul style="list-style-type: none">
Effects of policy on stakeholders:		
<ul style="list-style-type: none"> The policy is a good start for rectifying HCRW problems 		<ul style="list-style-type: none"> The policy must be co-ordinated with DWAF and DEAT to be effective
<ul style="list-style-type: none"> Funds are limited 		<ul style="list-style-type: none"> It must be shown that the best use of funds is being made The policy could provide a mechanism for co-ordinated use of funds
<ul style="list-style-type: none"> The policy is applicable to everybody involved in HCRW - it levels the playing field for all stakeholders 		<ul style="list-style-type: none">
Time frame for implementation:		
<ul style="list-style-type: none"> The policy cannot be implemented all at once 		<ul style="list-style-type: none"> Short, medium and long-term improvements must be implemented A phased approach to implementation
Final goal of HCW management in Gauteng:		
<ul style="list-style-type: none"> A standard framework for HCW management needed 		<ul style="list-style-type: none"> It was felt that the Policy could meet this need, but that it should be in compliance with the SABS standards
<ul style="list-style-type: none"> A need for enforcement 		<ul style="list-style-type: none"> Inspectors for policing the Policy must be available
<ul style="list-style-type: none"> The group felt that the Policy is a good thing 		<ul style="list-style-type: none"> The general consensus was that the policy is a good thing, but the way forward to ensure dynamic co-ordination and enforcement is needed Interaction with other future policies must be ensured



6. MORNING PLENARY SESSION:

The issues and recommendations which arose in the breakaway groups were summarized during the plenary session by a reporter chosen from each group.

The main points that arose from each group can be summarized as follows:

Group 1:

- 'Green procurement' should be encouraged (but not legislated at this stage). Polyvinyl chloride (PVC) in the waste stream is a problem with incineration because of the release of dioxins that occurs.
- Some form of monitoring of dioxins is needed as South Africa is a signatory to the POP convention
- There should be enforcement of the HCW Management Policy through legislation, but only legislate what can be enforced
- Screen radioactive waste out of the waste stream before treatment
- Education regarding correct HCRW management needed at all corporate levels
- Monitoring of transporters and treatment providers is needed – environmental management systems could be required as well as annual auditing
- AIDS epidemic - what impact will it have on the levels of HCRW?
- Use European Union emission standards in Gauteng instead of DEAT Emission Guidelines
- Continue to look for financial incentives for meeting emission requirements, e.g. reduced frequency of testing if the facility has demonstrated compliance for some time.

Group 2:

- SA should make use of the World Health Organisation colour coding system for HCW containers
- Standardization of HCW containers is needed i.e. puncture- and leak-proof
- Pharmaceutical waste needs to be prioritised
- Guidelines on disposal of animal carcasses are needed
- Training of health care officials with generic training materials specific to South Africa
- Increased awareness of impact of poor HCW management practices
- Internal audit systems needed for “cradle to grave” HCW management
- Definite timeframes for policy implementation are needed – a phased implementation is more achievable

Group 3:

- Effective segregation of HCW requires not only training, but a change in attitude and behaviour – this can take years to achieve
- Suitable containerization for HCRW – cardboard boxes are unsuitable.
- Recognised colour coding should be used
- Permitting of vehicles used for transporting HCRW with standardized markings on the vehicles is needed
- Suitable storage facilities e.g. refrigeration, freezing facilities, palletization, leak-proof containers are needed
- The design of trolleys for internal transport is important
- 'Green procurement' should be encouraged, but not legislated
- Non-burn technologies need to have emission standards implemented
- Batch monitoring of the effectiveness of non-burn treatment is needed
- Independent auditing of treatment facilities should be carried out

- Background data on the receiving environment is needed. The State was seen as being responsible for providing this
- Pharmaceutical waste needs prioritization
- Radioactive waste needs to be screened out of the waste stream at the treatment feed inlet
- A 5 year phase-in time is realistic, but some aspects can be achieved sooner

Group 4:

- Waste from abattoirs is not addressed
- A national HCW policy is needed
- Implementation needs to be addressed at a grass roots level
- Guidelines for problem HCRW are needed e.g. radioactive waste
- Fragmented laws are an obstacle
- There is a shortage of accredited service providers
- There is a lack of capacity at Local Authority level
- Lack of funds is a big problem
- The HCW Policy levels the playing field for all stakeholders, so it was felt to be a good thing
- The HCW Policy will also provide a needed standard framework for HCW management

The report back was followed by a comment and question time. Some of the comments that were made are summarized below:

- Great care must be taken before legislation regarding dioxins is implemented. Legislation of this sort has wide-ranging implications.
- If there is to be focus on compounds such as halogens, then other hazardous compounds such as chrome must also be considered.
- The priority rating on pharmaceutical waste should be significantly increased. These types of waste can have severe environmental and health impacts.
- Sterilisation of health care risk waste was seen as a technology with many potential problems and in need of careful control.
- Health care risk waste being carried in linen to the laundry is an issue needing attention.
- Waste generated by radiology departments needs addressing.
- Similar policies are needed in the other Provinces and not only Gauteng.

7. PRESENTATION OF THE HEALTH CARE WASTE INFORMATION SYSTEM:

The Health Care Waste Information System (HCWIS) was presented in summary form by Torben Kristiansen, Chief Technical Adviser of Rambøll.

➤ Overall HCWIS Concept:

- Only urgently needed data is to be collected (only what is manageable, affordable and operational)
- There is to be one category of HCRW only
- Accurate data on monthly tonnage of waste will be required
- Treatment plants (on and off site) must report to DACEL
- Transporters importing/exporting (Gauteng) must report to DACEL
- Generators and transporters must keep records of mass and destination of HCRW

- Each data set is to be collected once only.
- Only major generators are to be identified at this stage and smaller generators are to be grouped

➤ **Sources of Data:**

- Treatment Plants:
 - Monthly tonnage per transporter (quarterly)
 - Annual tonnage per generator
 - Annual static information (capacity, address, etc.)
- Transporters
 - Monthly tonnage exported from Gauteng (quarterly)
 - Annual static information (capacity, address, etc.)

➤ **Overview of the HCWIS:**

- **Dynamic Data** : Reported monthly (treatment plants and export by transporters):
 - Identification of reporter (ID number)
 - Month and year
 - Amount and unit (kg/tonne)
 - Waste type (HCRW only waste type at present)
 - Delivered to ID number (transporters only)
 - Received from ID number (treatment plants only)
- Reported annually (treatment plants):
 - Amount per generator (Gauteng & external)

➤ **Annual Static Data:**

- Company name
- Postal/physical address
- Contact numbers (Tel, Fax, Email)
- Contact person
- Treatment capacity (treatment plant only)
- Unique identified (ID number)
- Reporter type (transporter/treatment plant)

➤ **Record-keeping Requirements:**

- To comply with the reporting requirements, identification of the mass of loads (or part of total loads) per generator for each delivery to a treatment plant must be recorded and kept
- Hence, loads (or part of total loads) from one generator must be weighed and recorded separately and reported to the treatment plant

➤ **Assumptions for Recording:**

- Transporters and treatment plants must register with DACEL
- The mass of HCRW per generator will be determined and reported at the treatment plant only
- If the transporter exports HCRW outside Gauteng, the same requirements for mass and record keeping exist

- When a full truck load is made up of waste from several generators, each group of receptacles must be identified and receptacles from individual generators must be weighed separately
- Records of HCRW mass and generator are to be passed on from the treatment plant to the transporter and from there to the generator

➤ **Reporting Cycle:**

Quality Assurance of Data

- Information from the previous year
- Knowledge of the reporter
- Input from Environmental Officers
- Comparison with similar reporters
- Common sense (logic of data submitted)
- Criteria for flagging of the reporter for further investigation (deviations, illogical data)
- Verification of generators', transporters' and treatment plants' historic records (on demand)

➤ **Conceptual Database Structure:**

Tasks of DACEL

- To monitor trends in monthly HCRW amounts
- To keep an inventory of transporters and treatment plants (ID numbers)
- To plan for sufficient treatment capacity
- To do State of the Environment reporting
- To undertake enforcement, licensing etc.

➤ **Possible Organisation of HCWIS:**

Tasks of HCWIS Officer

- To ensure that data is collected
- To send reminders and feed-back to reporters
- To check reporting compliance
- Verification of data
- Entering of data into system (manual or up-load)
- Producing of reports and graphs
- Acting as a link between reporters and DACEL
- Supplying of reports to other departments

➤ **Possible Obstacles:**

- Generators and transporters do not currently weigh HCRW. However, there is weighing of whole trucks by some companies
- Generators do not have resources or trained capacity to manage HCRW well
- There is a tradition of counting receptacles instead of weighing
- Multi-loads are delivered from several generators
- There is a lack of identifying markings on containers (e.g. Identification numbers)
- There is no tradition of tracking waste
- Legislation must be enacted

➤ **Next steps:**

- There must be consultations and further development processes for improving the HCWIS concept
- Finalisation of the HCWIS Framework Document and identification of regulatory actions are needed
- Approval of the HCWIS Framework Document is needed
- Development of a HCWIS implementation programme and elaboration on regulatory requirements is needed
- Testing of the HCWIS in pilot projects must occur
- Consultation, review, adjustment and skills development must take place
- Implementation and monitoring of the HCWIS must take place

8. COMMENTS ARISING FROM THE PRESENTATION:

- The possibility of a treatment charge based on the mass of waste collected at the source and data automatically being captured was suggested.
- Companies may be reluctant to divulge sensitive information that could be used against them or by competitors.
- An issue for discussion is how to address competition for work between companies.
- Collecting of data must be directed towards a specific purpose and must be manageable.

9. BREAKAWAY SESSION ON THE DRAFT HEALTH CARE WASTE INFORMATION SYSTEM:

Workshop participants were assigned topics to discuss in their breakaway groups according to Table 8 below:

Table 8 : Afternoon breakaway groups

HEALTH CARE WASTE INFORMATION SYSTEM DISCUSSION GROUPS				
	GROUP 1	GROUP 2	GROUP 3	GROUP 4
Discussion issues	Issue 5: Information needs, target groups and requirements	Issue 6: Data collection and quality assurance	Issue 7: Reporting and dissemination	Issue 8: Overall aspects of Policy
Facilitator	D. Fischer	G. Bothma	D. Rama	S. Nkosi
Scribe/ Advisor	N. Busch	K. Otto	L. Godfrey	T. Kristiansen
Reporter	Nominated by group	Nominated by group	Nominated by group	Nominated by group



Specific concerns or issues that were raised, and possible solutions suggested during the breakaway session are summarised in Tables 9 to 12 below.

Table 9 : Discussion issues from afternoon breakaway session : Group 1

GROUP 1	FACILITATOR : D. FISCHER	ISSUE 5: INFORMATION NEEDS, TARGET GROUPS AND REQUIREMENTS
ISSUES/CONCERNS RAISED		SUGGESTED SOLUTIONS
Data requirements :		
<ul style="list-style-type: none"> The primary question to be asked of DACEL : What is the data to be used for? 		•
<ul style="list-style-type: none"> Where is the waste going? 		•
<ul style="list-style-type: none"> Is the treatment effective and conforming to the set standards 		•
<ul style="list-style-type: none"> How is the waste transported (Duty of Care principle) 		•
<ul style="list-style-type: none"> Audit trail : Mass, date transported, date processed and Safe Disposal Certificate 		<ul style="list-style-type: none"> DEAT has suggested a bar coding used as a tracking system : coordinate with the National Waste Information System The generator should receive a copy of the report from the service provider Up until now only an Environmental Health Officer can issue a Safe Disposal Certificate - this needs to be addressed
<ul style="list-style-type: none"> Different waste types generated 		•
<ul style="list-style-type: none"> Provision for storage of waste 		<ul style="list-style-type: none"> Maximum storage time should be shorter than indicated (Box 5.7)
<ul style="list-style-type: none"> Contact number to report illegal dumping 		•
<ul style="list-style-type: none"> What should be reported, to whom, and level of detail 		<ul style="list-style-type: none"> All aspects should be verifiable
<ul style="list-style-type: none"> The system should be user friendly 		•
Who should be required to collect data?		
<ul style="list-style-type: none"> All generators should be included in the WIS, including small generators like tattoo artists 		<ul style="list-style-type: none"> Local Government has an important role to play collecting this information

Table 10 : Discussion issues from afternoon breakaway session : Group 2

GROUP 2	FACILITATOR : G. BOTHMA	ISSUE 6: DATA COLLECTION AND QUALITY ASSURANCE
ISSUES/CONCERNS RAISED		SUGGESTED SOLUTIONS
Suitability of HCWIS:		
<ul style="list-style-type: none"> The HCWIS will be costly – who will pay? 		<ul style="list-style-type: none"> Part of income generated through permit application fees or penalties could fund WIS officers
<ul style="list-style-type: none"> It is a good thing to have, but many practical issues will need to be addressed 		•
<ul style="list-style-type: none"> The HCWIS should be legislated in order to be effective 		•
Primary benefits:		
<ul style="list-style-type: none"> Control of HCW, planning and resource management 		•
Accuracy of data:		
<ul style="list-style-type: none"> Terminology (Data sheets) has a different connotation and could cause confusion 		<ul style="list-style-type: none"> Change the terminology to "Data Templates" or "Reports"
<ul style="list-style-type: none"> HCWIS should allow for HCRW classification that ties in with the billing system 		•
<ul style="list-style-type: none"> Bar-coding should be introduced and the HCWIS 		•

be extended to become a HCRW tracking system	
<ul style="list-style-type: none"> Suppliers of containers should ensure that the containers have the correct markings on them 	<ul style="list-style-type: none">
<ul style="list-style-type: none"> Managerial information on the HCWIS is to be provided to the affected authorities, contractors and health care facilities 	<ul style="list-style-type: none">
<ul style="list-style-type: none"> Delivery notes are to be used as the reference information source to verify information captured in the WIS 	<ul style="list-style-type: none"> Delivery notes can be consolidated into quarterly reports
Data capture:	
<ul style="list-style-type: none"> Data capture should be done electronically on a template provided by DACEL 	<ul style="list-style-type: none">
<ul style="list-style-type: none"> Reports should be generated quarterly and an annual "Static Report" generated 	<ul style="list-style-type: none">

Table 11 : Discussion issues from afternoon breakaway session : Group 3

GROUP 3	FACILITATOR : D. RAMA	ISSUE 7 : REPORTING AND DISSEMINATION
ISSUES/CONCERNS RAISED		SUGGESTED SOLUTIONS
Reporting:		
<ul style="list-style-type: none"> A key question was "What benefits will the data add to DACEL's understanding of HCW management in Gauteng?" 		<ul style="list-style-type: none"> Data collected must be useful for improved HCW management
<ul style="list-style-type: none"> The question was also posed : "What data is required for what purpose"? 		<ul style="list-style-type: none"> Emphasis must be on integration of data across Government departments - horizontal integration as well as vertical
<ul style="list-style-type: none"> Reporting should be mandatory as part of the licence requirements for treatment facilities 		<ul style="list-style-type: none">
<ul style="list-style-type: none"> How does the DoH fit into the HCWIS - what are their responsibilities 		<ul style="list-style-type: none">
<ul style="list-style-type: none"> The HCW generator must be responsible for supplying the necessary information - a requirement under NEMA 		<ul style="list-style-type: none">
<ul style="list-style-type: none"> Local Authorities should report to DACEL on waste generation within their region - small generators would then be accounted for 		<ul style="list-style-type: none">
<ul style="list-style-type: none"> The general view was that small generators are mostly responsible for illegal disposal of HCRW 		<ul style="list-style-type: none"> Licence applications for general practitioners, clinics etc should require proof of legal disposal of HCRW
Dissemination:		
<ul style="list-style-type: none"> Three levels of dissemination: <ul style="list-style-type: none"> Client specific - DACEL, DoH, DWAF, Local authority Generic - state of HCRW within the province, the larger picture Companies - should be able to produce their own reports from this information 		<ul style="list-style-type: none">
<ul style="list-style-type: none"> Confidentiality of the information was an issue raised. Some information is sensitive e.g. clients, tonnages 		<ul style="list-style-type: none">
<ul style="list-style-type: none"> However, the general consensus was that WIS information should be readily available to all via the Internet 		<ul style="list-style-type: none">
Requirements and resources:		
<ul style="list-style-type: none"> Weighing facilities at all generators producing >10kg per day 		<ul style="list-style-type: none"> Alternative suggestion: Some transporters weigh the waste using spring scales (accurate to 0.5kg on 100kg load; cost ±R250) at the point of collection. The generators oversee the weighing and sign of the waste tonnages and verify the information.
<ul style="list-style-type: none"> Generators must label their containers with the required information, including waste content 		<ul style="list-style-type: none"> Making use of the Manifest System would be a good thing

<ul style="list-style-type: none"> • Double check on tonnages received by the transporter and by the treatment facility by weighing the trucks on arrival at the treatment plant. 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • Some cost implications were expected 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • No additional resources were deemed necessary. Data is already being collected by generators and transporters, however the type of information collected may change 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • However, more skilled personnel will be required to collect and record information and this may mean training costs and higher salaries 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • Verification of data was seen as being very important to provide an audit trail 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • There is an important need for facilities for recording exceptions, failures in the system 	<ul style="list-style-type: none"> •

Table 12: Discussion issues from afternoon breakaway session : Group 4

GROUP 4	FACILITATOR: S. NKOSI	ISSUE 8: OVERALL ASPECT OF THE HCWIS
ISSUES/CONCERNS RAISED		SUGGESTED SOLUTIONS
Constraints and preconditions for implementation of the HCWIS:		
<ul style="list-style-type: none"> • Disposal of <u>all</u> HCRW via permitted treatment plants: it was felt that this was unrealistic to expect in the short term. It was expected that there would be cheating, most likely by generators of HCRW 		<ul style="list-style-type: none"> • Improve awareness as to the importance of correct disposal
<ul style="list-style-type: none"> • There is a need for a more detailed definition of HCRW 		<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • Registration/permitting of transporters/treatment plants: It was felt that this was necessary and that generators should also be registered 		<ul style="list-style-type: none"> • Licences should be revocable • Very clear guidelines must be provided • Smaller operators must be included
<ul style="list-style-type: none"> • There was a query as to whether Gauteng Provincial Government has the authority to close down a business if there is serious non-compliance 		<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • Legislation of compliance with HCWIS: the group felt strongly that the system would only work in conjunction with legislation 		<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • Monitoring of scale of compliance should be implemented 		<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • Timing and phasing in of the HCWIS: can be implemented as soon as legislation is in place 		<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • National HCWIS needs : it was felt that the HCWIS could meet national needs as long as it was done with stakeholder consultation 		<ul style="list-style-type: none"> •

10. AFTERNOON PLENARY SESSION

The issues and suggestions arising out of the afternoon breakaway groups were summarized by the reporters chosen by each group. The main issues and comments coming from the different groups can be summarised as follows:

Group 1:

- A key question was: what is the data to be used for?
- Data collection is important to establish a reliable audit trail for HCRW

- Data needed: mass, date transported, date processed and Safe Disposal Certificate
- All generators of HCRW should be included in the HCWIS, even small generators

Group 2:

- A primary benefit of the HCWIS would be the control of HCW, more effective planning and resource management
- The HCWIS should be legislated in order to be effective
- Bar-coding should be introduced and extended to become a HCRW tracking system
- Delivery notes could be used as the source of reference information to verify data
- Data capture should be done electronically on a standard DACEL template

Group 3:

- A key question was: How will the data benefit DACEL's understanding of HCW management in Gauteng? Data must be useful for improved HCW management
- Data reporting should be mandatory as part of the licence requirements
- Local Authorities should report to DACEL on waste generation by small generators within their region. Small generators were regarded as the main culprits in illegal disposal of HCRW
- Data should be available to all stakeholders, bearing in mind that some information could be sensitive
- Audit trail: Weighing of waste by the transporter (spring scales), verification by the generator and double checking through weighing of the vehicles
- The ability to record exceptions and failures was seen as important

Group 4:

- There is a need for a more detailed definition of HCRW
- Registration/permitting should be required of generators, transporters and treatment facilities
- Legislation of HCWIS was seen as essential
- Monitoring of compliance is needed
- Timing of implementation: as soon as legislation is in place
- The HCWIS can meet national needs as long as there is stakeholder consultation

11. WAY FORWARD AND CLOSURE

Sydney Nkosi, Assistant Director, Integrated Waste Management GDACEL, outlined GDACEL's vision of the way forward. Timeframes planned are presented in Table 13 below.

APPENDIX 1 : LIST OF INVITEES/ATTENDEES

NAME	ORGANISATION	COMMENTS	GROUP
William Smith	IDC		
Willie Potgieter		Absent	3
Clifford Durrheim	Aid Safe Waste		3
J. Amis	AngloGold	Absent	1
Chrisma Hattingh	ARWYP	Absent	2
Monica Sefefe	Baragwanath		2
Temba Buthelezi	Buhle Waste		3
Derek Cosijn	Calyx Environmental		1
Carl Vetter	Clinical Waste Man		2
Joshua Segone	Clinical Waste Man		3
Mandy Wolverson	Clinical Waste Man	Absent	4
Clement Mosala	Clinical Waste Management		2
John Loftus	Clinical Waste Management		1
Sam Chauke	Clinical Waste Management		1
Stranger Kgamphe	Clinical Waste Management		4
Kevin Bowman	ClinX Waste Management		3
Dr Christos Eleftheriades	Coal & Waste Utilisation		2
Arnie Claasens	Consolidated Waste	Absent	3
Linda Godfrey	CSIR		3
Dr Dhiraj Rama	DACEL		3
Gerda Bothma	DACEL		2
Hanre Crous	DACEL Integrated Waste		4
Lucas Mahlangu	DEAT	Absent	1
N. Daniel	DEAT		4
T Khumalo	DEAT		1
Anchen Dreyer	Dept. Legislature		1
Michiel Eksteen	Dept. Public T, R & W		3
Albert Marumo	DoH		4
Benny Maphaka	DoH		2
J. Kluge	DoH		4
Laetitia Ferreira	DoH		1
Jabulani Maluleke	DWAF		1
Riana Munnik	DWAF	Absent	
Tolmay Hopkins	DWAF		1
Thya Pather	DWAF		4
Lafras Heron	Earthlife Africa	Absent	1
Patrick Pringle	Earthlife Africa		1
Ufrieda Ho	Earthlife Arica	Absent	1
Thandi Baartman	EkurhUleni Metro		1
J van Niekerk	Environmental Health		4
Jane Eagle	Environmental Management		1
Neil Brink	Enviroserve		3
Glynis Rossouw	Evertrade Medical Waste		2
Samantha Di Cillo	Evertrade Medical Waste	Absent	3
Hannes Hendriks	Expectra		3
Hannes Hendriks	Expectra 25		3
Martie Roos	Gauteng Health		1
Vulani Khoza	Gauteng Health		1
Dee Fischer	GDACEL		1
Indran Govender	GDACEL		
Niels Busch	GDACEL		1

NAME	ORGANISATION	COMMENTS	GROUP
Syney Nkosi	GDACEL		4
Leonard Llewellyn	Groundworks		4
Kurt Worrau-Clare	Hospital Assoc		1
Sharon Sibbert	Hospital Association	Absent	
Emmanuel Chanza	HPCSA		1
Florence Nkosinkulu	HPCSA		2
Sue Roberts	ICASA		4
Hennie Neethling	IWM		1
Marius van Zyl	Jarrold Ball & Associates		1
Hazel Marx	Jarrold Ball & Associates	Absent	
Raymond Pieterse	Kempton Park Metro		1
Johann Moller	KPMG		4
Marietta Liebenberg	KPMG		1
Andre Johnson	Kumba Resources	Absent	
Conrad Bezuidenhout	Kumba Resources	Absent	2
Brian Thomson	Macrotech		3
Johanna Ngobeni	Medicross Health Care		2
Wilhelm Alheit	Metago Environmental Engineers		3
Margaret Lombard	Microwaste		3
Zama Zincume	National DoH	Absent	4
Clive Balchin	Netcare	Absent	2
Kobus Otto	Otto & Associates		2
Alex Charnley	Phambili Services		2
Reginald Nkosi	Phambili Services		3
Vincent Charnley	Phambili Services		2
Ticky Raubenheimer	Pharmaceutical Society		2
Dave Harris	Pik-it-up		3
Maud Letebele	Pik-it-up	Absent	
Delmarie Kruger	Poltech Pty Ltd		2
Otto Graupner	Poltech Pty Ltd		3
C E Ker	Pretoria Academic Hospital		2
Torben Kristiansen	Rambøll		4
Justice Makunyula	Randfontein City Council		1
Dave Baldwin	SA Consultant		3
Janet Magner	SA Consultant		2
John Clements	SA Consultant	Absent	3
Nancy Coulsen	SA Consultant		2
AP Thieme	SAFURNCO		2
Bill Olivier	SAFURNCO		3
W. Olivier	SAFURNCO	Absent	
M. Kirby	SAIMR		4
Connie Mashizo	SANCO		
Berhard Eigenhuis	Sasol		2
B. Eigenhuis	SASOL		2
Ian Hopewell	SASOL		2
Nick Tsinonis	Thermopower Process Technology		3
Dr Cornelia Gerstenberg	Veterinarian		2
Ian Hammond	Waste Resources	Absent	3
Herman Wiechers	Wiechers Environmental		4
Andre Swart	Wits Tech		2

APPENDIX 2 : ATTENDANCE REGISTERS

Group 1 : Morning

ATTENDANCE REGISTER					
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Group 1 : Afternoon

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Vukani Khoza	Gauteng Health	011 355 3495	011 355 5399	082 547 4314	
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Group 2 : Morning

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Florence Nksinkulu	HPLSA				
Ian Hopewell	IWM	011 679 4912	011 679 4912	082 443 7517	annoo@mweb.co.za
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Cornelia Gerstenberg	Net Care	011 301 0379			
Alex Charnley	Phambili Waste Management	011 614 6124	011 614 9902	083 260 3004	Phambili@iafrica.com
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Group 2 : Afternoon

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Kobus Otto	Kobus Otto & Associates				
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Catherine Ker	Pretoria Academic Hospital	011 354 1596	011 354 2201	082 417 7879	
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Group 3: Morning

ATTENDANCE REGISTER					
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Group 3: Afternoon

ATTENDANCE REGISTER					
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Clifford Durrheim	Bin Beez	011 792 7930	011 792 2431	082 649 6182	
Themba Buthelezi	Buhle Waste	011 866 2316	011 866 2321	083 325 2435	ibuhle@iafrica.com
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Reggie Nkosi	Phambili Waste Services	011 614 6126	011 614 9902	082 562 8384	phambili@iafrica.com
Dave Harris	Pikitup Jhb	011 434 1188	011 683 2698	082 855 9275	dharris@gjfmco.org.za
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Group 4: Morning

ATTENDANCE REGISTER					
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Hanrē Crous	DACEL	011 355 1933	011 337 2292		hanrec@gpg.gov.za
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J.P. van Niekerk	Env. Health Jhb	011 407 6811	011 403 1616	082 801 5837	aackerma@gitmc.org.za
Llewellyn Leonard	Groundworks	033 342 5662	033 342 5663	082 353 5029	llewellyn@groundwork.org.za
Sue Roberts	ICASA		011 489 0340	082 857 1333	infect@mweb.co.za
Lorraine Ndala	Jarrod Ball & Assoc.	011 485 1391	011 640 2463	082 741 5828	info@jbawaste.co.za
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Qaphile Ntsele	NDoH	012 312 0597	012 323 0796	072 297 3349	ntseleq@health.gov.za
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Jameson Malemela	SASOM	016 592 2753	016 592 1507	082 447 8593	jamesonk@iafrica.com
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Herman Wiechers	Wiechers Environmental	011 886 5709	011 787 6853	083 453 6327	wienv@mweb.co.za



Group 4: Afternoon

ATTENDANCE REGISTER					
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Sue Roberts	ICASA		011 489 0340	082 857 1333	infect@mweb.co.za
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Mike Kirby	National Health Laboratory Services	011 489 9048	011 489 9051	082 809 5992	mikek@mail.saimr.wits.ac.za
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