

TRAINING IN PUBLIC HEALTH CARE FACILITIES FOR HEALTH CARE WASTE MANAGEMENT (HCWM)

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ABOUT THE SPEAKER

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His international liaison included the following research projects, namely:

- the Hillbrow Community Partnership for Health Personnel Education, funded by the Kellogg Foundation; of which he was the Chairperson;
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He obtained the following qualifications:

- National Diploma in Public Health; National Higher Diploma in Public Health and National Higher Diploma in Post School Education from the Technikon Witwatersrand.
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ABSTRACT

It is widely acknowledged that training is an essential component of health care waste management (HCWM). This is partly because it is often assumed that lack of adequate knowledge is the reason behind poor waste segregation practice in the public sector. Training

provision in the public sector in Gauteng for HCWM has been inadequate and unplanned, while there has been no systematic training provision across the province for public health facilities.

The Gauteng Sustainable Health Care Waste Project used qualitative research methods to identify capacity gaps for HCWM. This research involved focus group discussions with 90 health care workers. This research was used to inform the development of two training programmes to address the present capacity gaps in public health facilities for HCWM.

The first training programme is a cascade programme of on the job informal education to teach attitudes, knowledge and skills essential to the implementation and maintenance of a new HCWM equipment system. This programme trained more than 70 supervisors at two pilot sites to train their staff on the wards and departments. Each trainer was given a teaching pack of posters and other interactive teaching tools to support their training. Teaching tools were developed so that training was multidisciplinary.

The second programme is a five-day intensive training course for Health Care Waste Officers. Health Care Waste Officers are a designated part time responsibility for a key member of the waste team.

This paper will examine the value of qualitative research in identifying capacity and training gaps in HCWM, the importance of understanding training within the broader context of capacity building, the importance of addressing a wide range of capacity gaps and not just knowledge gaps and evaluation results of training programmes.

TRAINING IN PUBLIC HEALTH CARE FACILITIES FOR HEALTH CARE WASTE MANAGEMENT (HCWM)

INTRODUCTION

It is widely acknowledged that training is an essential component of health care waste management. This is partly because it is often assumed that lack of adequate knowledge is the reason behind poor waste segregation practice in the health care sector. Training provision in the public sector in Gauteng for HCWM has been inadequate and unplanned. There has been no systematic training provision across the province for public health facilities.

The Gauteng Sustainable Health Care Waste Management Project developed two training programmes as part of the capacity building programme. The first training programme is a cascade programme of on the job informal education to teach attitudes, knowledge and skills essential to the implementation and maintenance of a new HCWM equipment system.

The second programme is a five-day intensive training course for Health Care Waste Officers. Health Care Waste Officers are a designated part-time responsibility for a key member of the waste team at the pilot sites.

This paper discusses the research conducted at two pilot sites used to inform the development of these training programmes. (The pilot sites are Leratong Hospital, a 700 bed hospital in the West Rand, and Itireleng Clinic, a community health centre with a midwife obstetric unit in Soweto). It discusses the importance of understanding the role of training within the broader context of capacity building and the importance of using qualitative research methods to collect information about training needs. Finally the paper presents evaluation results from the cascade training programme.

IDENTIFYING TRAINING NEEDS

It is tempting to believe that training is the answer to problems that arise in HCWM in health facilities. However, often the reason for poor performance may not be because of a lack of training. For example, an over filled sharps container could have many root causes, such as staff not knowing when to close the sharps container at three-quarters full, the wrong sized sharps container at the point of generation so that it is filling too quickly, an inadequate supply of sharps containers to the health facility so that it is not possible to replace a sharps container on time, and poor ordering and delivery of sharps containers to wards from health facility stores etc. It is critical for successful training interventions in HCWM that training needs are identified alongside other capacity needs that can not be addressed through training. This is done by conducting a "performance discrepancy analysis." This approach describes "capacity" in terms of "performance". Performance gaps are associated with equipment failure and inadequacies, poor management, human resource issues, training and policy gaps. Capacity building therefore ensures that the "hard" and "soft" sides to development programmes are sufficiently addressed for successful implementation and long term sustainability.

A performance discrepancy analysis identifies areas of performance where there is less than optimum functioning. These areas of discrepancy or under- functioning can also be described as "gaps". For HCWM, the three critical commonly identified gaps that are relevant to training are:

- knowledge gaps;
- skills gaps; and
- attitude gaps.

However, in addition to these areas other important areas are known to impact on the delivery of HCWM systems and include the following:

- inter-staff relations;
- worst case scenarios when the HCWM system breaks down completely;
- technology gaps;
- policies and procedures gaps; and
- organisational, management and supervisory gaps.

Each area of discrepancy identified is summarised in Box 1. For a successful training intervention it is essential that the correct knowledge, attitude and skills gaps are identified. Secondly trained health workers then need to operate in a system where their performance is not undermined by other gaps in the system. For example health workers can be trained to close sharps containers when three quarters full, but this must be supported by a policy that enforces this standard.

Box 1: The performance discrepancy analysis for HCWM in a health facility

Knowledge gaps: There is a set of basic information that all categories of health workers should know about HCWM. This includes basic knowledge of types of health care waste, segregation of health care risk waste, occupational health and safety issues, use of specific equipment etc.

Skills gaps: Skills are distinguished from knowledge by being something “you can do” rather than something “you know”. Skills include correct use of equipment and the implementation of procedures, for example, closing liners correctly, loading sharps correctly in sharps containers and completing an incident report form.

Attitude gaps: For effective HCWM it is essential that health workers hold positive attitudes towards care of the environment, occupational health and safety and teamwork

Worst-case scenarios: This category describes situation when the performance of the HCWM system is seriously undermined and jeopardised. For example, there is no collection by the service provider, or no provision of equipment.

Inter-relations: Inter-relations is concerned with staff relations, especially those that adversely impact on the performance of the HCWM system such as poor communication between general assistants, nurses and doctors.

Technology gaps: The specifications, standards and appropriateness of equipment all impact on the performance of the system.

Policies and procedures gaps: Policies, guidelines, procedures and/or codes of practice are essential to support any HCWM system. Policy and procedure gaps happen where policies and/or procedures are missing. Often policy and procedures for HCWM are written into one document called a *Code of Practice*.

Organisational, management and supervisory gaps: These gaps relate to the management function as a whole. The Code of Practice referred to above would normally be expected to describe the organisational structures necessary to support HCWM at a health facility level. This includes roles of senior management, all categories of staff, the role of the occupational health and safety committee and the service contract with the service provider.

USE OF QUALITATIVE RESEARCH METHODS

Information for a performance discrepancy analysis is collected through use of a number of research methods. This includes; a review of all relevant documentation, on site inspections and completion of audit forms and checklists and key informant interviews with senior and middle management. However, an important contribution to the information collected at the Gauteng Sustainable Health Waste Management Project pilot sites at Leratong Hospital and Itireleng Clinic was the use of focus groups interviews involving more than 90 health workers. The following focus groups were conducted with health workers at the two sites:

- two focus groups with senior and professional nurses including ward managers;
- two focus groups with auxiliary and enrolled nurses;
- one focus group with doctors; and
- three focus groups with general assistants and ward helpers.

The purpose of the focus groups was to do the following:

- explore the range of factors that impact on the behaviour and practices of staff;
- explore the knowledge of staff about health care waste management;
- explore the attitudes to health care waste management; and
- understand the roles and responsibilities in health care waste management.

The advantage of using qualitative methods is that it allowed the researchers to explore with a large number of health workers the range of factors that impact on HCWM. Qualitative research is usually done when aspects of a topic are poorly understood. It avoids predetermining issues and predetermining the relative importance and weighting of issues that inevitably happens when a quantitative survey tool is applied. A broad range of questions is used at first, which allows the focus to be sharpened once the study is taking place.

The focus groups were conducted by an independent researcher and by the capacity building consultant at the pilot site. A brief was prepared for each category of health worker to be interviewed. The interviews were recorded and conducted either in English or seTswana, and were then transcribed and analysed for recurrent themes and issues. The results were analysed for each pilot site and for each category of health worker.

The results of the focus group discussions with health workers were summarised in the following categories for each pilot site:

- The use of liners and boxes and the overall health care waste management system
- What happens to waste?
- Sharps containers
- The risks of waste
- Attitudes
- Reasons for miss-segregation and mistakes in HCWM
- Use of protective clothing
- Chemicals
- Sorting waste
- Staff relations
- Roles and responsibilities
- Problem solving
- Incentives
- Training and communication

- Terminology

RESULTS FROM THE QUALITATIVE RESEARCH RELEVANT TO THE DESIGN OF THE TRAINING INTERVENTIONS

A number of striking results emerged from the analysis of the focus groups that had relevance for the final design of the training programmes. These include the following:

- knowledge levels about HCWM improved down the traditional health worker hierarchy;
- knowledge levels about segregation and hazards appeared good although there was the need to reinforce the correct information;
- health workers felt unappreciated in relation to HCWM;
- there is a level of poor practice in HCWM that is related to negligence that probably has its root causes in broader aspects of low health worker morale in the public sector;
- multidisciplinary training is important overcome communication barriers; and
- doctors believe that they do not have a role to play in HCWM.

The following description is taken from the Survey Reports for Leratong and Itireleng¹.

Knowledge

The most striking finding is that the knowledge levels of health workers improved down the traditional hierarchy of health workers. General assistants at Leratong hospital had an excellent overall understanding of the waste system, doctors the worst. This is graphically illustrated by the following quotes:

General Assistant: "I also work in a Medical Ward. We also use black bags for left over trash like disposable food container from patients and for bandages, gauze, gloves we use the red boxes and then we also use a "sharps" container for syringes, needles and any sharp object."

Doctor: "We are mostly worried about sharps containers. Other waste we don't know too much."

In fact doctors made no mention of general waste at all and they struggled to recall other types of waste containers other than sharps containers. All categories of nurses could recall all the components of the waste system, although at the Itireleng clinic where there has been no history of training staff were less sure about segregation.

Auxiliary/ Enrolled nurse. "There are boxes where we put everything in. the box is called a red box. Everything goes in there."

The general assistants know that general waste goes to the landfill site and health care risk waste are destined for incineration, although probably not everyone in the focus groups was absolutely clear about this. The risks to scavengers at the dumpsite were widely quoted. One participant did go as far as saying:

General Assistant: "Sometimes there are gloves or syringes in the dustbin outside the ward. We have gloves that we can use to clean up so if I see a mistake I correct it because if I don't do it

¹ Survey Report Leratong
Survey Report Itireleng

someone will collect the bin as it is and this will create problems at the waste disposal centre when things are mixed.”

Nursing staff is able to identify the hazards for the general assistants of poor waste segregation. This includes possible needle stick injuries from needles being placed in plastic liners rather than sharps containers and the hazards of lifting overfilled or heavy cardboard boxes. Doctors felt that for both medical and non-medical staff needle-stick injuries are the overwhelming concern. The general assistants had most to say about the risks of waste because they feel that they are at the receiving end of this. Their feelings about being exposed to infectious waste are also linked to feelings of not being appreciated.

General Assistant: *“We do a lot of work and even risk our health and lives from highly infectious diseases but we are not appreciated.”*

Attitudes

Feelings of not being appreciated predominate. Waste is felt to be a hazard about which you should be “vigilant.” Attitudes to waste are related to whether workers feel that they are appreciated for the jobs that they do. A general assistant feels that if his/her health and safety is put at risk by poor practice of others then clearly they feel undervalued.

General Assistant: *“When they finish their patients, they don’t go back to clear up those things that need their attention. They just throw them anywhere.”*

Auxiliary and enrolled nurses also feel that the Department of Health does not care for them:

Auxiliary Nurse: *“If you get sick they say you are careless.”*

Lower level nurses complained of being over stretched and felt that nursing sisters did not really care either. The attitude of doctors was very much that there is no time for waste management and that there are “*more important things*” than waste management.

Reasons for miss-segregation and mistakes in health care waste management

In all of the focus group discussions, it was significant that no one admitted to making mistakes in the segregation of waste even though the researchers were at pains to point out that the discussion was confidential. Many comments were collected from nurses and general assistants about this topic. Doctors were less forthright and felt that the only reason why mistakes occur is:

Doctor: *“(we) are occupied with examination. We have got no time to pay attention to waste.”*

This is interesting because the nursing groups identify doctors as the culprits:

Auxiliary Nurses: *“The doctors are the ones who are not up to date. They are the ones who make mistakes.”*

Auxiliary nurses go as far as claiming that doctors are the “biggest culprits” in this mess. One reason given for the poor practice of doctors is the fact that they know somebody else will clear up after them.

In the group discussions with all categories of nursing staff, it was acknowledged that nurses themselves are often the culprits of miss-segregation. The word “*negligence*” was used to describe their behaviour.

Nurse: "It's not that they don't know, that is just negligence. But we all know there is not a sister that doesn't know the general waste and the medical waste. We sisters, especially, we order these plastics. We know the red plastic is for what."

General assistant: "There is nothing we can do, we come in after everyone is gone. This is a new way of dealing with these things and they are reminded every day of the proper procedure of disposing of waste but they don't seem to learn"

Nurses acknowledged that they do request general assistants to sort-miss-segregated waste before it is taken out of the ward for collection. General assistants felt that it wasn't their role to do this and they felt that waste should be properly segregated from the time it is discarded. Presently it is general assistants who bare the brunt for any misplaced waste. It was apparent that senior nurses were not clear about the correct procedure for miss-segregated waste.

Team work and staff relations

General assistants and auxiliary and enrolled nurses had the most to say about staff relations. The overwhelming feeling is that there is very little teamwork and that workers are treated badly by those categories of workers who are considered above them. The general assistants feel that all *"waste problems are put on our shoulders"*. They feel blamed and abused in the current system. Although senior nurses recognise that general assistants are unfairly treated and even said, *"You know, if she was my sister, I wouldn't be treating her this way"*, auxiliary nurses also feel blamed for the current problems.

Auxiliary Nurse: "We only hear from them when we have made mistakes."

Senior nurses and other nursing categories reported that they are scared to confront doctors. For this reason, doctor's behaviour goes unchallenged.

Although the present situation reflects the lack of teamwork, there are comments that reflect the willingness of staff to work together and being involved in multi-disciplinary teamwork.

General Assistant: "We saw some nurses going into the other room. This is the first time that we have seen them going into a meeting about waste. I wish we were in the same meeting. The problem could be solved quicker."

Roles and responsibilities

It is interesting that at both ends of the hierarchy, participants had less to offer about roles and responsibilities. Doctors went as far as saying that they *"don't have a role in looking after the health care waste system."* Their interface with the system is through the senior ward sisters. They also feel that it isn't their role to talk to nurses about their behaviour.

Nurses had a great deal to say about roles and responsibilities. In particular the auxiliary and enrolled nurses who find themselves between senior nursing staff and the general assistants, had stronger ideas about who is responsible for what.

Issues that evoke strong feelings

There were two areas that were highlighted by participants in the focus groups that evoked strong feelings amongst participants. The first concerns the location of sharps containers in areas of high activity such as casualty. The second concerns the availability of protective gloves for general assistants. Because these are issues that are associated with strong feeling it is

important that any intervention actively addressed these and again underlined the usefulness of having used qualitative research approaches.

Doctors felt that the provision of sharps containers was shocking,

Doctor: "It is still horrible. In an absolute state. Even now when you take blood, you look for the container and you are happy that you didn't prick five people on the way."

Protective clothing was of great concern to the general assistants. Although they were supplied with gloves for cleaning there were several complaints about these. These included the following:

- gloves tear easily;
- the gloves are too large and water easily gets in because they do not fit close to the wrist;
- it takes a long time to get a replacement pair; and
- expectations are to keep one pair of gloves for the whole year.

The general assistants are also well aware that gloves do not protect them from a needle-stick injury.

The general assistants reported that they had recently been asked not to use the latex gloves used by medical staff. Latex gloves are felt to be expensive and it would be wasteful for general assistants to be using them. However this instruction fed into a general perception that the health of the general assistants is less important.

General Assistant: "What all this means is that here in the hospital there are people in high places and they look down upon us as sub-human and they feel we don't matter. What they forget is that we are also mothers and fathers of children who depend on us, what if we get sick or die? So I use latex gloves whether they like it or not. They claim that we are wasteful but how are we supposed to protect ourselves? We have to take responsibility for our health and life for our children's sake."

THE DESIGN OF THE CAPACITY BUILDING PROGRAMME

The capacity building programme for the pilot sites sought to address the gaps identified above primarily through the development of appropriate training programmes. However, there were three other significant performance gaps that were identified through other research methods that did have a bearing on the design of the capacity building programme. The three other significant performance gaps were:

Worst-case scenarios where the HCWM system broke down completely at the two pilot sites, for example:

- The buying department at Leratong Hospital had at different times left the hospital stores without equipment for waste collection especially liners. This had been because of a breakdown in timely ordering or a problem with the supplier.
- This distribution of equipment around the hospital was not always reliable and therefore there was stockpiling of cardboard boxes and other equipment in the wards.
- The budget did not allow for the procurement of sufficient bins for general waste and health care risk waste at the point of generation. Likewise old and worn bins were not replaced.
- At Itireleng a range of liners, of different colour (not just black and red), were supplied through the regional store that results in incorrect colour coding.

- Poor management of staff routines and of the service provider contract resulted in placentas being left uncollected for days at Itireleng.

Policy and procedures

There were very few documented policies and procedures with regard to waste at Itireleng and Leratong. It was essential that new procedures be developed to support the improved HCWM system.

Organisational, management and supervisory gaps

The present management capacity for the HCWM system was weak at the pilot sites. There were several compounding reasons for this. One of these reasons included the absence of policy to support HCWM. One of the implications of this was that there was no internal or external auditing of the HCWM system. Further, there was also no HCWM champion in health facilities who could facilitate development of the HCWM system. The Occupational Health and Safety (OH&S) structures at both the pilot sites were weak and there were no dedicated OH&S staff that could assume a leadership role for HCWM. All of this was compounded by a lack of training provision both for managers and for all categories of health workers. Consequently middle management supervision of HCWM line functions in the hospital and clinic wards and departments was very poor and there was no internal performance monitoring of the HCWM system. The OH&S committee at both pilot sites did not report on waste or was involved with inspections.

The approach to capacity building at Leratong Hospital and Itireleng Clinic therefore had seven elements of which training was one part. The overall approach to capacity building at the pilot sites ensured that the capacity building programme complemented the introduction of new equipment and that issues that had been shown to evoke strong feeling were addressed. Thus general assistants were supplied with new protective gloves and sharps containers were conveniently sited in areas of high activity. Training was therefore an integrated component of a broader strategy. The capacity building programme involved:

1. Provision of new policy and procedures for HCW Management written as a Code of Practice
2. Introduction of improved monitoring and reporting through OH&S Committee
3. The introduction of a dedicated Health Care Waste Officer and an Assistant
4. Knowledge, attitudes and skills training
5. Awareness activities
6. On the job skills coaching
7. Evaluation of capacity building activities

THE CASCADE TRAINING PROGRAMME

The primary approach to knowledge, attitudes and skills training at the pilot sites was a “train the trainer” approach. This cascade method of training aimed to reach the maximum number of people within a short period of time. The approach relied on supervisors being trained to teach their own staff. The training programme communicated critical information, supportive attitudes and essential skills. Information was largely generic and where possible multidisciplinary training was encouraged to build better communication between cadres of workers with regard to waste.

To do this, supervisors received a teaching pack that included three teaching posters, teaching notes to reinforce the main information to be taught and two interactive teaching exercises that could easily be completed on the wards and in departments.

Table 1 summarises what needed to be taught to doctors, nurses and general assistants to address the knowledge, attitudes and skills gaps at the pilot sites. One key teaching topic that was reinforced consistently was that all health workers are members of the “waste team” and therefore had responsibility to teach and coach others. All the teaching topics on Table 1 were organised into three teaching posters supported by teaching notes. Supervisors were introduced to the teaching pack during a train the trainer session that took 2.5 hours. Supervisors were encouraged to train multidisciplinary groups of staff using one or maximum two teaching posters at a time.

Table 1: Teaching topics to address the knowledge, attitude and skills gaps for nurses, doctors and general assistants at the pilot sites

Performance Gap	Nurses	Doctors	General Assistants
Knowledge	<ul style="list-style-type: none"> -HCWM equipment system -Segregation of waste -Recycling -Procedures -OH&S reporting -Monitoring and enforcement 	<ul style="list-style-type: none"> -HCWM equipment system -Segregation of waste -Recycling -Procedures -OH&S reporting -Monitoring and enforcement 	<ul style="list-style-type: none"> -HCWM equipment system -Segregation of waste -Recycling -Procedures -OH&S reporting -Monitoring and enforcement
Attitudes	<ul style="list-style-type: none"> -Protection of OH&S -Care of the environment -Communication with seniors about waste -Part of a team 	<ul style="list-style-type: none"> -Protection of OH&S -Care of the environment -Communication with nurses and general assistants about waste -Part of a team 	<ul style="list-style-type: none"> -Protection of OH&S -Care of the environment -Communication with medical staff about waste -Part of a team
Skills	<ul style="list-style-type: none"> -Use of new sharps containers -Seal liners -Proper use and placing of coloured liners -Segregate all waste correctly -Coach other staff -Use monitoring and reporting system 	<ul style="list-style-type: none"> -Use of new sharps containers -Segregate all waste correctly -Use monitoring and reporting system -Coach other staff 	<ul style="list-style-type: none"> -Seal liners -Use protective clothing correctly -Proper use and placing of coloured liners -Load internal trolley -Unload internal trolley into 7701 wheelie bins -Coach other staff -Use monitoring and reporting system -Use of chemicals for cleaning and cleaning procedures

EVALUATION RESULTS FOR THE CASCADE TRAINING PROGRAMME

The cascade training system was highly successful at the pilot sites. Training records showed that more than 70 supervisors were trained as trainers. At Leratong hospital the 65 trained supervisors were then collectively responsible for more than six days of training on HCWM in the first five weeks of implementation at the pilot sites. A survey conducted at Leratong Hospital prior to the start of training and then five weeks later found that 91% of the sample in the follow-on study had been trained about the new waste system. Of these 73% found the training very useful and 24% useful.²

The survey also confirmed the results of the focus group research that had indicated that knowledge levels about HCWM are high. The baseline survey found that 85% of respondents knew that medical waste is put into red liners and 88% in the follow on survey. However, other results indicated that where information was less well known such as “general waste goes to the landfill site” there was an improvement from 55% to 77% between the two studies. This indicated that the cascade method had successfully improved knowledge levels.

Qualitative focus group research was used to find out from the trained supervisors about their experience of the cascade training method. The supervisors reported that they had found the method extremely successful. The supervisors felt that two of the reasons for this were that their staff was more open to information being taught by “insiders” rather than outside experts and that their role as supervisors had been strengthened by acting as the trainers. When asked about their segregation practice in the follow-on survey 68% of respondents said that they always segregate waste correctly. Eighty percent of respondents then said that training helps segregation. However, 53% also indicated that well positioned containers and 46% highlighted good supervision as critical to sustaining segregation practices. This result reinforces that training for HCWM will always need to be part of an integrated approach to improving HCWM.

THE 5 DAY INTENSIVE TRAINING PROGRAMME FOR HEALTH CARE WASTE OFFICERS

The second training programme that is presently in the process of development as a result of studies at the pilot sites is the development of a 5 day intensive training programme for Health Care Waste (HCW) Officers. The designation of a HCW Officer and Assistant was a component of the capacity building plan. Terms of reference for the HCW Officer were prepared for use at the pilot sites. It is a recommendation of the Gauteng Sustainable Health Care Waste Management Project that a HCW Officer and two assistants be designated at all larger public health facilities in Gauteng. The HCW Officer is a designated responsibility for a professional nurse, infection control nurse or safety, health and environment co-ordinator. It is a part-time responsibility.

To prepare designated staff for this task a 5 day intensive training programme is planned. The focus of the course is HCWM within a health facility. The course material references important standards such as national guidelines, SABS codes and the draft Gauteng Regulations for Health Care Risk Waste. The course also utilises the draft Code of Practice evaluated at the pilot sites, emphasizing the importance of ensuring that training is properly contextualised. The entry level for this programme is expected to be Matric plus three years of tertiary study.

The five key outcomes for this training programme are:

1. To understand the key concepts and principles of HCWM
2. To understand all aspects of the cradle to grave management of all nine health care waste streams

² Summary of Findings at the Pilot Sites

3. To understand the organisation and reporting for health care waste
4. To plan training and awareness activities
5. Able to conduct basic monitoring for non-conformances against the Code of Practice.

The assessment for the course will require participants to complete the following for a health facility:

- A comprehensive equipment plan.
- An organisational organogram for HCWM.
- Outline waste management plan.
- A training plan.
- An outline plan for an awareness activity.
- A monitoring plan.

CONCLUSION

By adopting an approach to the development of capacity that examined the performance of the HCWM system it was possible to ensure that training programmes were properly supported. Formative and evaluative research results consistently indicated the importance of an integrated approach to the development of training. The application of qualitative focus group research methods at the pilot sites provided valuable insights into HCWM that could be applied both to the content of training programmes but also to the training methodology.

The results from the pilot sites indicate that two levels of training are needed in public health facilities in Gauteng to support improved HCWM. The first level is a generic multi-disciplinary programme that can be successfully taught by trained supervisors in wards and departments. This programme must be supported by appropriate teaching materials. The evaluation results at Leratong Hospital indicate that it is important not to over emphasize knowledge gaps in HCWM. It would appear that often health workers have the necessary information but need to have the relevant skills, procedures or positive attitudes reinforced. The second level of training targets newly designated HCW Officers.

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