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KNOWLEDGE, ATTITUDES AND PRACTICES OF HEALTH CARE WORKERS REGARDING DISASTER PREPAREDNESS AT JOHANNESBURG HOSPITAL IN GAUTENG PROVINCE, SOUTH AFRICA

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A research report submitted to the

Faculty of Health Sciences, University of the Witwatersrand, Johannesburg,

In partial fulfilment of the requirements for the degree of

Master of Public Health

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25 November 2008

DECLARATION

I, Rosemary Maud Moabi, declare that this research report is my own work. It is being submitted in part fulfilment of the requirements for the degree of Master in Public Health at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

_____

_____day of_____2008

DEDICATION

To my husband, Raymond and our 2 children, Khensani and Tshepiso, thank you for your support, without your encouragement I wouldn't have achieved this

To my parents, thank you for all the dedication in raising me to be who I am today

ACKNOWLEDGEMENTS

I wish to acknowledge the late Dr Anthony Joffe, my initial supervisor, for all the ground work you started in assisting me with this research. You gave me all the learning ropes and I was looking forward to complete this research with your help.

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My thanks to Mr Sagie Pillay, The Chief Executive Officer at the Johannesburg Hospital, for allowing me to conduct this research at your hospital.

Special thanks to Precious and Maureen, Mr Pillay's personal assistants for following up on questionnaires distributed, and ensuring that they are brought back to your office

Thanks to all the management of the Johannesburg hospital, who participated in the study. I know how tight your schedules are, but thank you for saving 15 minutes of your time towards completing the questionnaire

TO GOD BE THE GLORY

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ABSTRACT

The purpose of the study is to ascertain the knowledge, attitudes and practices of hospital management at the Johannesburg Hospital regarding disaster preparedness.

Objectives: The study is to assess the current status of awareness of the management regarding disaster preparedness; to determine whether there are hospital specific plans; knowledge of whether the plans are regularly updated or not; to determine attitudes towards disaster management plans and drills and to determine current practices with regards to disaster preparedness .

Study design: The study design was a cross sectional survey. The study population included the hospital administrators, head of clinical units, head of casualties, the chief porter, the chief clerk, the theatre matron, senior sisters and doctors in the casualty department, head of security, head of transport and the chief pharmacist

The study was conducted utilizing a self administered questionnaire with structured and open ended questions. In case where management were not available, the person acting in that capacity was requested to complete the questionnaire. Twenty five out of the thirty five managers selected completed a self administered questionnaire. The response rate was 71,4%.

Findings: The management at the Johannesburg Hospital was aware of the disaster preparedness of the hospital and its plans, and disaster management preparedness. Their attitudes to the plans and drill were largely positive. However, the practices were deficient and work still needs to be done in regard to ongoing training, performance of drills and the frequency of regular updating of the plans.

CHAPTER 1



The image of the Johannesburg Hospital

1.1 BACKGROUND

The Charlotte Maxeke Johannesburg Hospital is an accredited central hospital with 1088 beds serving patients from across the Gauteng province and neighbouring provinces. The hospital is located in Parktown and serves in theory as well as a referral hospital for a number of hospitals in its referral chain. It offers inpatient and specialist outpatient's services mainly level 3 and level 2.[1]

The hospital offers a full range of tertiary, secondary and highly specialized services. The hospital is also the main teaching hospital for The University of the Witwatersrand, faculty of Health Science. The institution provides the service base for undergraduate and post-graduate training in all area of health professions[1]

The Charlotte Maxeke Johannesburg Academic Hospital has a private wing Folateng- a Sesotho name meaning Place of healing. Each ward gives the patient the quality and convenience of private health care with specialist physicians and cutting edge technology that only a long-established hospital has the capacity to offer. Folateng uses a part of Johannesburg hospital R855million /year to foot its bill.[2]

Folateng has 100 beds and treated 6 600 patients last year. The unit is running at full capacity and 100 beds will be added next year.[2]

The Johannesburg Hospital has a total of 6000 staff members, and the accounts department is responsible for a salary budget of R6 000 000 monthly. A total of R1 500 patients are registered daily, including 280 casualties and 100 inpatients, and 7 000 patient documents are microfilmed daily.[3]

The telephone system has 10 switchboards with 112 incoming lines and 1 250 extensions, and it handles 12 000 incoming and 10 000 outgoing calls daily. There is also an internal intercom and paging system with 2 000 extensions.[3]

Its challenges at present are the following:

- Shortage of health professionals (e.g. pharmacists, nurses and medical officers)
- Rising costs of laboratory services and pharmaceuticals
- Budgetary constraints
- Impact of HIV/AIDS

It is the only public hospital in Gauteng to be acknowledged as the Best Public Hospital for four consecutive years from 2003 to2007 by the readers of a major publication.[1]

Emergencies of note which have occurred around Johannesburg Hospital are amongst others, the Ellis Park Disaster in April 2001 in which 43 people were crushed to death and 250 were injured. Most people who were severely injured in the disaster died on the scene and did not reach the hospital.[4]

1.2 Justification for the study

The Johannesburg hospital is among the largest hospitals in South Africa, identified as one of the sites for pioneering hospital restructuring in the late 1990 and has been subject of a number of cases on hospital finance, retention of nursing staff and corporate governance, developing by the Wits Business School Case Centre, in collaboration with the Wits School of Public Health[5]

Johannesburg Hospital is exposed to both external and internal disasters. The external disasters such as disease outbreaks like Cholera, viral infections such as haemorrhagic fever, and internal disasters such as floods, fire, and food poisoning. The hospital has to be well prepared in case of a disaster and all plans need to be in place should a disaster occur.

Concerted action must be taken to reduce the loss of life, damage to property, economic and social disruptions in the event of a disaster must have a disaster plan .As part of the requirement of the District of the Gauteng Province, hospitals must have a disaster plan that is regularly updated.

1.3 Why Johannesburg Hospital?

Johannesburg Hospital is a tertiary hospital and is highly specialized. The catchment area surrounding the hospital is large. Some of the casualties of the Ellis park disaster in 2001 were treated there, however we don't know if the hospital was adequately prepared and equipped to attend to mass casualties

With South Africa winning the 2010 World Cup bid, the hospital needs to be prepared for the event of any nearby disaster and from the casualties that may arise thereof, resulting in injury and loss of life.

1.4 STUDY AIM AND OBJECTIVES

Study aim

To determine the knowledge, attitudes and practices of health care workers at the Johannesburg Hospital regarding disaster preparedness in the year of 2007.

Study Objectives

To assess the current status of awareness of the management regarding disaster preparedness.
To determine knowledge of whether the disaster management plans are regularly updated or not.
To determine the attitudes of staff towards disaster management plans and drills.
To determine the current practices of health care workers with regards to disaster preparedness.

1.5 LITERATURE REVIEW

Hospitals the world over have been involved in disasters, both internal and external. These 2 types of disasters are independent, but not mutually exclusive. Internal disasters are isolated to the hospitals and occur more frequently than do external disasters. [6]

The key for any successful mastering of a crisis is to be well prepared. All potential problems have to be carefully analyzed and respective precautions have to be taken. Major accidents and disasters can only be mastered and controlled by intelligent planning. [7]

Emergency preparedness refers to the readiness of a political jurisdiction to react constructively to threats from the environment in a way that minimise the negative consequence of impact for the health and safety of individuals and the integrity and functioning of physical structures and systems.[8]

An annual assessment of the emergency plan is required to assure emergency preparedness. Preparedness assessments should include: (1) elements of disaster planning; (2) emergency co ordination; (3) communication; (4) training; (5) expansion of hospital surge capacity; (6) personnel; (7) availability of equipment; (8) stockpiles of medical supplies; and (9) expansion of laboratory capacity. [9]

Emergency preparedness can be defined by the preparedness pyramid which identifies planning, infrastructure, knowledge and capabilities, and training as the major components of maintaining a high level of preparedness.[9]

Although training and education have long been accepted as integral based nor standardised, the need for effective evidence based disaster training of healthcare staff at all levels, including the development of standards and guidelines for training in the multi disciplinary health responses in major events, has been designated by the disaster response community as a high priority.[10]

In the study undertaken by nurses in Hong Kong, the conclusion was that nurses are not adequately prepared for disasters, but are aware of the need for such preparation. Also, that disaster management training should be included in the basic education of nurses.[11]

Recent world events have increased awareness about the limits of the response capabilities to meet the challenge of disasters and of the emergency need to prepare for catastrophic events. Since the attack of September 11, 2001 in the United States, and the subsequent Anthrax scare, the approach to preparing for and dealing with major incidents has had to be rethought. [12] The World Trade Centre disaster on 11 September 2001 provides new information, and points out new threats, new information systems, new communication opportunities and new detection methodologies. [13]

Planning is a never-ending jurisdictional process, while the plan itself represents a snapshot of that process at a specific point in time. Similarly, a written plan does not guarantee preparedness; Preparedness is dynamic and contingent upon ongoing processes[8] Identifying an effective means of teaching hospital disaster preparedness to hospital-based employees is an important task.[14]The need for effective evidence-based disaster training of healthcare staff at all levels, including the development of standards and guidelines for training in the multidisciplinary health response to major events, has been designated by the disaster response community as a high priority.[15]

The emergency planning process is probably the most effective place for developing the co ordination that response teams will need during an actual emergency. There are two ways in which such issues can be resolved. The first of these is in careful review of the emergency plans of individual agencies, while the second is in the repeated drills, exercise and critique of the plan.[8]

In the United States, two problems arise in this context of creating plans for terrorist incidents. The first difficulty is an emphasis on the presence of the plan as a document, rather than an emphasis on the planning process. The second problem is a general lack of awareness of the literature on planning for natural and technological disasters on the part of elected officials, policy actors and law enforcement officials who direct much of the terrorism plan construction. [8]

Good planning includes pre deployment medical review to ensure "fitness for duty" and considers the following: (1) personal risk factors, (2)hazards likely to be associated with particular field locations, and (3) risks involved with assigned tasks (e.g. workload and pace, work/rest cycles, available resources, and team/supervisor dynamics).[16]

Planning also should address worker health surveillance, medical monitoring, and availability of medical care.[16]

With the growing threat of a naturally occurring or man-made global pandemic, many public, private, federal, state and local institution have begun to develop some form of preparedness and response plans. Among those in the front lines of preparedness are hospitals and medical professions who will be among the first responders in the event of such a disaster.[17]

In 1996, Carley and Mackway-Jones examined British hospital's readiness for a major incident. A total of 179 registrars were contacted in 34 different units throughout Britain. One hundred and forty four responses were obtained. Sixty registrars (47%) had not read any of their hospitals major incident plan. Only 54% of the registrars questioned felt confident in the knowledge of their specific role during a major incident. Major incident co-ordinators were contacted at 34 hospitals, and 17 responses obtained.[18]

Rehearsal of major incident plans vary widely between hospitals with 82% of hospitals having practised within the past 5 years but only 35% were planning for a rehearsal in the next twelve months. 25% of hospitals that responded did not hold any teaching on major incident planning at their introduction sessions for junior and middle grade doctors.[18]

In contrast, in 2005, military physicians(in Israel) and experts on bioterrorism conducted special seminars and lectures for the staff of the hospital emergency department and internal medicine wards .The conclusion was that emergency department physicians were found to be highly knowledgeable in nearly all medical and logistical aspects of the response to different bioterrorist threats. Intensive and versatile preparedness modalities such as lectures, drills and posters, given to a carefully selected groups of clinicians, can increase their knowledge, and hopefully improve their response to a bioterrorist attack.[19]

Since the 2203 SARS outbreak, hospitals have invested in pandemic planning, as evidenced by the comprehensive plans.[19] Organisational support mechanisms for healthcare workers were included these hospital plans.[20]

Disaster drills are a valuable means of training health care providers to respond to mass casualty incidents from acts of terrorism or public health crises.[21] When a disaster occurs, it is for governments to provide leadership, civil defence, security, evacuation and public welfare. The medical aspects of a disaster account for less than 10% of resources and personnel expenditure. Hospitals and health care provider teams respond to unexpected occurrences such as explosions, earthquakes, floods, fires, war or the outbreak of an infectious epidemic.[13]

In Hawaii, it was recommended by a nationally commissioned report that more frequent interagency drills, increase funding for family emergency preparedness and local community response teams, and continuous training by emergency response coordinators could improve state and country preparedness and the report concludes that, overall, Hawaii is adequately prepared in emergency response capability, particularly in the area of medical services and interagency coordination.[22]

Healthcare systems are required to prepare an effective response model to cope with mass casualty incidents[4]. Hospitals need to review their plans and functionality openly and objectively to ensure that their perceived preparedness is consistent with reality. In addition, they urgently require guidance as to reasonable expectations of their capacity.[23]

The public health competencies necessary for an effective and efficient responses to bioterrorism include a complex combination of knowledge, skills, and abilities demonstrated by organisation members.

Those competencies are also defined as a combination of observable and measurable skills, knowledge, performance behaviour and personal attributes that contribute to enhanced employee performance and organizational success. In short, competencies go beyond knowledge or attitudes; they also describe how the workforce behaves.[24]

1.6 INTRODUCTION

The aims of Hospital Disaster Management Plan in the hospital is to reduce or prevent loss of life, to provide immediate and appropriate assistance to victims and to help in achieving rapid and durable recovery

From the hospital management point of view, it is possible to plan the disaster in 4 main phases:

1. Mitigation
2. Preparedness
3. Response
4. Recovery

1.7 DISASTER PLAN

Characteristics of a disaster plan

Key factors in a successful disaster plan according to the Asian Disaster Preparedness Centre[25] are**:**

1.7.1 **Simplicity**

The plan must be easy to follow. Concise instructions are critical to the success of the plan. It must be easy to read and if possible, translation should be offered to other language speakers.

1.7.2 **Flexibility**

The plan must allow for adjusting the response to the situation. Management should use the plan as a framework for decision making. It must be flexible enough to be used for a variety of disasters.

1.7.3 **Co-ordination**

Staff should know what they are supposed to do during a crisis, as well as having a basic understanding of how others are responding. It also requires advanced knowledge of capabilities and resources, both internally and externally.

1.7.4 **Leadership**

Leaders must provide clear and concise orders and they must constantly re-evaluate priorities based on need and the greatest good. Good leadership is critical for hospital disaster preparedness and consequent management.

1.7.5 **Communication**

Communication is one of the main problems in case of major disaster. Information has to be reduced to the most important facts. Wire and radio contacts as well as messengers have to be integrated into the communication concept. It also has to be taken into account that any system may fail. Appropriate marking of the staff in charge is also an important part of communication. Designated communication offices are needed.

1.7.6 It should be made with a **joint coalition** of other sectors. Other non-clinical departments should be involved including the traffic department, security, police and the media. Linkage with other government departments are critical to provide a comprehensive response.

1.7.7 Plans should be **periodically** updated. At least yearly according to most practices.

1.7.8 Plans should be executed only when necessary. However drill and continuous training should keep staff prepared.

1.8 Types of disasters

A disaster can be an internal or external. A disaster is internal if the hospital itself is involved in a disaster or in the disaster area. A disaster is external if the disaster is outside the hospital and multiple casualties are taken to the hospital or the hospital must dispatch a team to the disaster site/area.

Disasters can be divided into 3 categories[26]

- Natural events- such as storms, drought, earthquakes, disease epidemic.
- Technological events-such as explosions, structure collapse, radiological accidents.
- Civil/Political events- such as strikes, terrorism, biological warfare etc.

1.9 Process of development of a disaster plan[25]

The planning process should be as follows:

The planning committee should be established and have representation from all the departments of the hospital. The committee should conduct risk assessment and both internal and external disasters should be considered.

Responsibilities should be determined and distributed to all, resources analysed and strategies for prevention and mitigation identified.

The plans should be written and made available to all and all personnel should be trained.

The plans should be tested and regularly updated. Drills and simulation exercises will help in identifying loopholes and functional problems

1.10 Steps in disaster preparedness[25]

Risks associated to the area should be identified, as well as geographic and climatic hazards that could jeopardize the building.

Within the building, assessment of fire protection systems and fire extinguishers, electrical systems, plumbing and environmental systems should be identified. Regular inspection of the above should be done, fire alarms and fire suppression systems should be adequately maintained.

Internal disasters likely to occur are floods, fire and food poisoning. Man - made disasters likely to occur are power outages, sprinkler discharges, fuel and water supply failures as well as chemical spills.

A programme with concrete goals should be devised, resources identified, buildings should be regularly monitored, repaired and improved. The hospital should also be fully equipped, plans should be clearly outlined as to safe evacuation of patients.

With external disasters such as disease outbreaks, the Emergency Department should be prepared to absorb more casualties and to liaise with other hospitals to escalate its resources.

Disaster preparedness planning is a continuous process. Plans should be well written with important elements such as triage highlighted. Training of personnel should be done regularly, plans should be exercised regularly and the overall plan reviewed and amended in light of those exercised.

1.11 Key components of a disaster plan[27]

Patient flow into the hospital must be direct and open. Triage areas should be near to where patients are going to disembark. Patients must be identified and logged in quickly and accurately.
Security for all areas must be maintained. Effective communication from the site to the hospital and from the hospital internally must be maintained.
Information areas for families and the media must be established.
Provision for the serious psychological impact on victims and staff must be made.
Contingency plans for water, electricity and transportation must be made.
Evaluation plans for hospitalised patients and staff must be established.
Mutual aid agreements with other hospitals and surrounding communities must be defined beforehand and checked regularly for integrity.

1.12 Disaster Planning Committee

The Disaster Planning Committee is the body that is responsible for establishment, implementation and policy reviews of disaster plan on a regular basis. The infrastructure of the Disaster Planning Committee comprises of the chairperson who is the Hospital Emergency or Disaster Coordinator, the deputy chairperson, nursing coordinator, communication leader, security representative, public relations officer, EMS(Emergency Medical Services) representatives, Allied health sciences (Radiographer, National Health Laboratory Services, Pharmacy, Physiotherapy, Blood bank, Catering Services, Mortuary).

1.13 Joint Collaboration

Joint collaboration with other non clinical departments is important. These include the following:

1. Administration. For documentation and clerical work.
2. Staff reporting areas. They should report to their own areas and be available for allocation elsewhere.
3. Traffic Control. They should control traffic and lock down the hospital if need be.
4. Security. They should assist with Law enforcement to assist the traffic department.
5. Media Liaison. They should assist with dissemination of information to people over the radio.
6. Police Liaison. They should be assigned to do forensic tasks if a terrorist attack is involved.
7. Bereaved family members should be at an information point where information can be disseminated through.
8. Communication. Switchboard operators, PRO, Quality Assurance people are all important to facilitate communication during a disaster. They should have a facility to direct all the calls especially during an internal disaster.

Glossary

1. Disaster

   An occurrence of such magnitude as to create a situation in which normal patterns of life within the community are suddenly disrupted and people are plunged into helplessness and suffering and as a result, may urgently need food, shelter**,** clothing, medical attention, protection and other life sustaining requirements.[27]

2. Disaster Management
   The range of activities designed to maintain the control over disaster and emergency situations and to provide a framework for helping persons at risk to avoid or to recover from the impact of disaster. Disaster management deals with the situation that occurs prior to, during and after a disaster occurs.[27]

3. Internal Disaster
   A need for extra hospital personnel to care for patients and possible evacuation of them due to an accident within the facility such as fire, or explosion. [28]

4. External Disaster
   A disaster which occurs outside the hospital, somewhere in the community, when there is a disproportionate amount of hospital staff to care for the incoming emergency room patients or victims. [28]

5. Disaster Preparedness Plan

A formal written plan of action for co-coordinating the response of a hospital's staff in the event of a disaster within the hospital or the community. [28]

6. Drill

A simulation of a disaster to assess and improve the effectiveness of a health care organization's or system's disaster preparedness plan. [28]

7. Disaster Preparedness

It is a process for assessing risks and capacities for responding when disasters occur. It involves co-ordination and planning, surveillance and forecasting, training and orientation, stocks and logistics, and communication and consultation.[28]

8. Mitigation

A reduction or prevention of a disaster likely to happen. Mitigation plans wish primarily to reduce vulnerability. Active mitigation measures include raising awareness, dissemination of mitigation plans, knowledge promoting safe behaviour and rewarding preparedness measures.[28]

9. Response

It involves confirmation and investigation, case management, prevention of spread and surveillance.[28]

CHAPTER 2

2.1 RESEARCH METHODOLOGY

a) Study design

The study design is a cross sectional survey using close ended and open ended questions leading to a mixed method approach. It included health care workers at the Johannesburg Hospital in the different disciplines of clinical, administrators and logistics.

A KAP (Knowledge, attitudes and practices) study was conducted utilizing a self administered questionnaire with structured and open ended questions. They were selected on the bases of heading different units they were assigned to.

b) **Study population**

The health care workers selected to complete the questionnaire are key people who will be involved should a disaster occur at the Johannesburg Hospital. They are the following:

1. The hospital administrators
2. Heads of clinical Units and subspecialists
3. Heads of Casualties
4. The chief porter
5. The chief clerk
6. The theatre matron
7. Senior sisters and senior doctors in Casualty
8. The chief pharmacist
9. The senior switchboard operator
10. Head of Security
11. Head of transport

In case where the management was not available, the person acting in that capacity was requested to complete the questionnaire. No one besides the above mentioned individuals were asked to complete the questionnaire

c) Data collection

Two envelopes were distributed together with the questionnaire, one envelope was inside the questionnaire, which was used for the completed questionnaires by the participants. The other envelope was for the informed consent. The two envelopes upon completion of the questionnaire were left with the secretaries at the CEO's office. The envelopes were separated upon delivery to ensure confidentiality and anonymity.

The purpose of the study was explained to the participants and also that participation was voluntary and confidential. Of the number that received the questionnaire, 71,4% completed and returned the questionnaire. The survey was conducted during the months of May and June 2007.

2.2 LIMITATIONS OF THE STUDY

- Only the health care workers in selected positions who are the key people in their areas of work were being studied.
- Unwillingness and reluctance in being part of the research. Only 71,4% responded by completing the questionnaire. Other individuals requested to complete the questionnaire had to be reminded frequently to forward their completed questionnaires. The personal assistants for the CEO were requested to follow up on some questionnaire.
- Problems in completing the questionnaire may have been due to time constraints. This was actually the most limiting factor as participants had to be followed up consistently. For some participants, the researcher had to physically be there and ensure that the questionnaire was completed.

- Other respondents refused to complete the informed consent because they didn't want their names appearing in any form even though confidentiality and anonymity were guaranteed.
- Information given could not be assessed for accuracy or validity (information bias).
- No objective evidence of disaster plan management or awareness could be gained from a questionnaire survey (measurement bias).

2.3 DATA PROCESSING METHODS AND DATA ANALYSIS PLANS

The Chief Executive Officer of the Johannesburg Hospital gave permission for the study to be conducted at the Johannesburg Hospital. The questionnaires completed were coded and no names were put on the questionnaires. Name links to the codes were kept in a coded drawer. Information was kept confidential and only pooled data was to be presented. Descriptive analysis of the data was done and is presented as figures and tables. Some analytical analysis was also performed but because of the small numbers very few assumptions could be made.

2.4 QUESTIONNAIRE

The questionnaire was self administered. The questionnaire included twenty five questions with both open and closed ended questions. There were four broad categories:

1. Demographic information
2. Knowledge on disaster plans and preparedness
3. Attitudes about disaster planning
4. Practises currently taking place

2.5 ETHICAL CONSIDERATIONS

An Informed consent was given on a separate envelope to the questionnaire. Some participants felt there was no need to complete it, that agreeing to complete the questionnaire was in itself an agreement to participate in the study. To those who did complete it, a separate envelope was issued out, and the questionnaire and the consent form were separated at the delivery point site. No names of the participants were written on the questionnaire form. Voluntariness, understanding of information and disclosure of information was encouraged.

Ethical clearance was obtained from the University of the Witwatersrand Ethics Committee for the research. Approval number: M061135

2.6 FUNDING

The research was self funded and the costs included the following:

Stationery - R1500,00

Telephone calls – R1000,00

Travel – R1000,00

CHAPTER 3

RESULTS

This chapter outlines the main results from the analysis of the study. It includes the demographic data and the knowledge, attitudes and practises of the participants regarding disaster preparedness.

Section 1

a) Demographic data

Thirty five questionnaires were sent to participants. Of the thirty five, twenty five were returned completed. This gives the response rate of 71,4%. No reasons were given as to non participation.

Staff category responses were as follows:

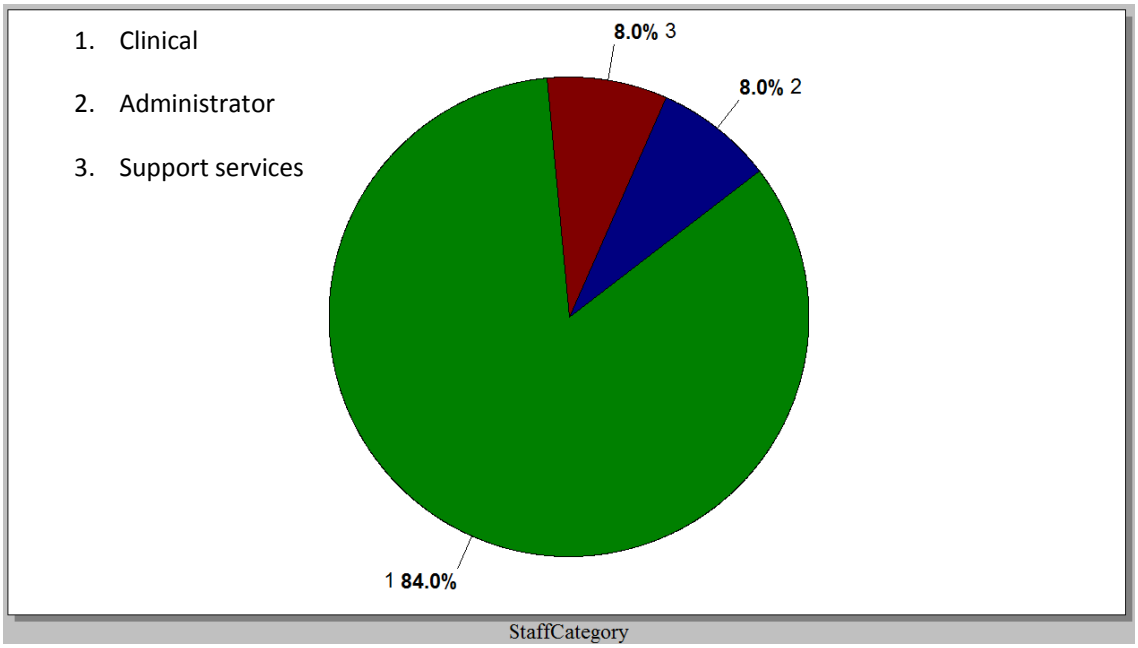


Figure 1: Proportion of staff category that responded to the survey

i) Clinical category

Figure 1 illustrates that 84% of the responders to the questionnaire were clinicians, 8% were administrators and another 8% were from the support services, which included porters, clericals, security and logistics. Of the clinicians, 50% were medical doctors, 45% were nurses and 5% were from the allied medical services.

Table 1.1 The percentages of participants in the clinical category

Doctors	50%
Nurses	45%
Allied	5%
Pharmacy	-

ii) Administrators

Of all administrators who participated, 100% were from the patient affairs. The administrators are the managers of the hospital. In the clinical category, they were the Chief Executive Officer, The Clinical Director, Human Resource and Finances.

Table 1.2 The number of participants in the administration

Human Resource	50%
Finance	50%

iii) Support Services

The number of health care workers was 8% of the study population. This included the porters, clerical division, the security and the logistics department.

Table 1.3 The number of participants in the support services

Porters	25%
Clerical	25%
Security	25%
Logistics	25%

b)Period worked in hospital

All staff members were asked as to how long they had worked in the hospital. Table 1.4 summarizes this.

Table 1.4 Period worked in hospital

PERIOD WORKED IN HOSPITAL	Frequency	Percent	Cum Percent
(1-5 yrs)	5	20.0%	20.0%
(5-10yrs)	9	36.0%	56.0%
(10-20yrs)	4	16.0%	72.0%
(20-30yrs)	6	24.0%	96.0%
(more than 30yrs)	1	4.0%	100.0%
Total	25	100.0%	100.0%

Above in table 1.4 is a description of the period worked in hospital by the various members participating in the study. Of the 25 questionnaires completed, 36% of the respondents had worked in the hospital for a period of 5-10 years, followed by 24% who worked for a period of 20-30 years. Only 20% worked for 1-5 years, followed by 10% who worked for 10-20 years.

Only 4% had worked at the hospital for more than 30 years. This illustrates that most respondents have worked for a period of 5-10 years, which assumes that they are quite knowledgeable about the hospital and that they understand how systems operate, what to do in a disaster situation and how they should handle the disaster.

Section 2: Knowledge

Questions that were addressed in this section was to assess whether respondents knew what a disaster is, what a disaster plan is, whether they knew where to find the plan, whether staff members understood their function during a drill and what disaster preparedness really is.

The results were as follows:

92% knew what a disaster is. Their definition of a disaster was within defining it as a calamity or an overwhelming situation where the resources are not adequate to cope with the disaster.

76% said they knew where to find the disaster plans. Though the question didn't ask them to elaborate on exactly where the plans are, most said they knew where to find them.

92% knew what a disaster plan is. Their answer to the question ranged from describing a disaster as a logistic structure to ensure optimal use of resources to a written plan used to manage a disaster.

84% said that they knew what drills are. Although the questionnaire didn't ask them to define what they were and how they are performed.

64% said that staff members understand their functions during a drill as opposed to 36% who didn't know. Even here the respondents were not asked to detail what their individual functions were in a disaster situation.

Only 62,5% knew what disaster preparedness is. Their answers ranged from a state of readiness in terms of equipment, human resources and skills to manage a disaster, to a planned response to an event.

Section 3: Attitudes

Table 3.1: Attitudes of staff towards disaster management.

Table 3.1 below summarises the responses received as regards attitudes to disaster preparedness by the senior management at the Johannesburg Hospital

	AGREE	DISAGREE	UNSURE
1. I do not need to know about disaster plans	4,2%	95,8%	-
2. Management should be adequately prepared should a disaster occur	91.7%	4,2%	4,2%
3. Disaster planning is for a few people in the hospital	4,2%	95,8%	-
4. Potential hazards likely to cause disaster should be identified and dealt with	96%	4%	-
5. Training is necessary for all health management	100%	-	-
6. Do you think it is necessary to have a disaster plan?	100%	-	-
7. Disaster plans need to regularly updated	95,8%	4.2%	-
8. Disasters are unlikely to happen in our hospital	20,8%	79,2%	-
9. Disaster management is for nurses and doctors only	4,2%	95,8%	-
10. Disaster simulation should occur frequently in the hospital	83,3%	4,2%	12,5%
11. Drills should be conducted in the hospital	95,8%	4,2%	-

The above table illustrates that senior management at the Johannesburg Hospital agree that they need to know about disaster plans, believe that they need to be adequately prepared should a disaster happen, that the plans are for all, that hazards likely to cause a disaster should be identified and dealt with. 100% felt that training is necessary for all health management and also that disaster plans are necessary and need to be regularly updated.

The individuals who disagreed that disasters are unlikely to happen in their hospital was 79,2%. Those who disagreed that disaster management is for nurses and doctors only was 95,8%. They believed that disaster management is for the entire management. 95,8% agreed that drills should be conducted in their hospital and 83,3% agreed that simulation should occur frequently in the hospital.

Section 4: Practices

The question on practises was to determine if participants knew if the disaster drills were performed at the Johannesburg Hospital, the types of drills which were done, If there was ongoing training and how often was it done, and also if the disaster plans were periodically updated and if so, how often.

72% knew that disaster drills are done at the hospital. 8% said they are not done and 20% didn't know.

40% didn't know the type of drills done. Of the remaining 60% it ranged from highly infectious diseases and trauma.

52% believed there is ongoing training at the hospital.

60% said disaster plans are regularly updated. 12% said they are not regularly updated and 28% didn't know.

4.1 Frequency of ongoing training

Table 4.1: How frequent should training should occur

Table 4 below summarises participants' responses as to how frequent training for disaster should occur.

	Frequency	Percent	Cum Percent
2 monthly	1	4.0%	4.0%
3-6 monthly	1	4.0%	8.0%
6 monthly	2	8.0%	16.0%
continously	1	4.0%	20.0%
dont know	13	52.0%	72.0%
every 3 months	1	4.0%	76.0%
every 4 months	1	4.0%	80.0%
monthly	3	12.0%	92.0%
weekly	1	4.0%	96.0%
yearly	1	4.0%	100.0%
Total	25	100.0%	100.0%

52% of the participants didn't know about the frequency of ongoing training, but some knew there was periodicity.

4.2 Periodic update of disaster plans

Table 4.2 Periodic update of disaster plans

Table 4.2 below describes how frequent participants felt that disaster plans should be updated

	Frequency	Percent	Cum Percent
3-6 monthly	1	4.0%	4.0%
6 monthly	3	12.0%	16.0%
annually	2	8.0%	24.0%
dont know	11	44.0%	68.0%
every 3 years	2	8.0%	76.0%
when need arises	1	4.0%	80.0%
yearly	5	20.0%	100.0%
Total	25	100.0%	100.0%

44% didn't know about the periodic update of disaster plans. 20% believed it is done yearly, 12% said it was done every 6 months. 8% said it is done annually and another 8% said it is done every 3 years. 4% said it is done every 3-6 months and 4% said when the need arises.

CHAPTER 4

DISCUSSION

The study aim was to ascertain the knowledge, attitudes and practises of hospital management at the Johannesburg Hospital regarding disaster preparedness. The objectives amongst others, was to assess the current status of awareness of the senior management regarding disaster preparedness, to determine what a disaster plan is, whether the staff know where to find the plans. Their knowledge, attitudes and practices were also determined. The results will be critically analysed and discussed as to why people responded in a particular manner.

4.1 Response rate from various categories of staff

The response rate to participation in the questionnaire was 71.4% with 84% being from the clinical category. 50% in the clinical category were doctors, 45% were nurses and 5% were from the allied medical category.

. All the doctors who were asked to complete the questionnaire were clinical heads of departments or senior doctors who worked in the medical and trauma casualties.

Many clinicians were asked to participate in the study. Most of who were doctors and nurses from the casualty departments. These are mainly the clinicians who take responsibility should a disaster occur.

They are the ones who need to know where the plans are, what disaster preparedness is, and what to do should a disaster occur. They are basically the first line of management because they take a leadership role in the disaster in terms of management of patients, triaging and stabilizing the patients on arrival to the casualty department.

Only 8% of the administrators were asked to participate in the study. These included individuals from the clinical category, logistics, patient affairs and communication. The administrators are important in terms of being the liason between the hospital and the outside community. They also have a major responsibility in making sure that all systems are in place. Communication is highly important in this regard. The administrators have to ensure that the outside world has to know what is happening and communicate the information to people through the media.

Another 8% were from the support services which included porters, clerical, security and logistics. This entity is important in ensuring that patients are transferred to proper wards after they are stabilised in casualty, clerical will help open files for patients and keeping all the necessary data. Security is important inside and outside the hospital. Traffic may need to be re-directed away from the disaster area and other patients be transferred to other hospitals especially if it is an internal disaster.

4.2 Period worked in the hospital

Most of the respondents (36%) worked in the hospital for a period of 5-10 years, followed by 24% who worked for a period of 20-30years, then 20% who worked for 1-5years, then 16% who worked for 10-20years and lastly 4% who worked for a period over 30 years. This implies that a large percentage of the respondents are quite familiar with the hospital premises and are knowledgeable as to the day to day running of the hospital.

This at the same time doesn't necessarily mean they could be better prepared should a disaster happen and that they may not know where to find the disaster plans if they were not informed about where to find them. However, it does indicate a level of experience and an expectation that senior staff at a central hospital should have better knowledge of disaster management, its plans and its usefulness, than the more recently appointed.

4.3 Knowledge

The participants were quite knowledgeable about what a disaster is, what disaster plan is, where to find the plans, what disaster preparedness, what drills are and what their functions during drills are.

92% knew what a disaster is and their answers ranged around the following:

"An increase in magnitude of an incident"

"Disruption of normal activities"

"A situation that overwhelms the available resources"

92% again knew what a disaster plan is. Their answers ranged from the following:

"A written plan of action"

"A logistic structure to ensure optimal use of resources"

76% knew where to find the plans. The question did not ask if they knew the exact location of the plans and whether the plans are accessible should a disaster happen. However because it was a self administered questionnaire, one can assume that even if this was asked, there was no way to assess whether the response was true or not.

62,5% knew what disaster preparedness is. Their responses were as being ready as a hospital to handle a disaster. 84% knew what drills are. Even though the participants were not asked to define what drills are or what happens during a drill. 64% of the participants understand their functions during a drill or a disaster. This could pose a problem if senior members of staff do not understand their function in a precise manner in a drill situation. This can result in confusion and the disaster not being handled in a proper manner.

4.4 Attitudes

The participants' attitude towards disaster preparedness was good. They believed that they needed to have insight on disaster management. This includes that the plans be regularly updated, that staff should be trained and simulation should occur frequently in the hospital. They agreed that management should be adequately prepared should a disaster occur and that every member of staff should know their role should a disaster occur.

They also agreed that drills should be conducted in the hospital. If drills are frequently done, impending problems can be picked up early and addressed in time.

They also believe that disasters are likely to happen in their hospital. There has recently been a disaster in two hospitals around Johannesburg, the burning of a theatre at Coronation Hospital and the flooding of a theatre at Chris Hani Baragwanath Hospital. This resulted in evacuation of patients and cancellation of operations scheduled for the day. The researcher noted that the staff at the Johannesburg Hospital were aware of it. They have also recently witnessed the epidemic of Klebsiella last year at the Cecilia Makiwane Hospital in the Eastern Cape.

Also, Johannesburg Hospital was involved after the Ellis Park soccer event in April 2001 when a stampede occurred at the stadium when fans outside the stadium pushed to gain access to into the stadium which was already overflowing. 43 people were killed in the event.

Recently(in June 2007) all public hospitals faced a major crises during a public servants strike, and some patients had to be transferred out to private hospitals. Most hospitals declared this as a disaster. Had the strike affected private hospital staff members, massive casualties could have resulted.

4.5 Practises

The majority of respondents knew that disaster drills are done at the hospital even though 40% didn't know the type of drills done. They are aware of the importance of the drills but they are not sure of the frequency of those drills.

Even though 52% believed that there is ongoing training at the hospital, 52% didn't know the frequency of ongoing training. This may mean that the majority of the respondents are not aware of ongoing training and therefore may also not be going for training.

60% believed that disaster plans are regularly updated though 44% didn't know how often.

This indicates that there is deficiency in the practises of the management regarding disaster preparedness and that work still needs to be done regarding preparedness and practises of the hospital management.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The senior management at Johannesburg Hospital were found to have a reasonable knowledge on disaster and its management. Their attitude regarding disaster preparedness was good. They believed that disasters are likely to happen at their hospital and that they need to be prepared should they happen. Also that all staff members need to know about disaster planning, that they should know their function during a disaster. They also agreed that disaster plans need to be regularly updated.

Though they had good knowledge and their attitude was acceptable, their practices in terms of the frequency of ongoing and the frequency of regularly updating the plans was probably inadequate.

The findings of the research was that selected health care workers at the Johannesburg Hospital were aware of the disaster preparedness and its plans, and the disaster management preparedness. Their attitudes to the plans and drills were largely positive. However, the practices were deficient and work still needs to be done in regard to ongoing training, performance of drills and the frequency of regular updating of the plans.

Should a disaster occur at the Johannesburg Hospital, the majority of the senior management are not adequately prepared. Gaps need to be filled in terms of updating staff regarding regular drills, ongoing training on a regular bases with inclusion of all key people in the hospital.

5.2 Recommendations

The results are overall acceptable. There however is room for improvement. To improve the knowledge, attitudes and practices of senior staff at Johannesburg Hospital, the following recommendations are made:

1. Disaster plans should be placed in an area where they are accessible to all staff members. They should be readily available when needed. The Disaster Committee should ensure that all staff members know where the plans are. They should ensure that they are not locked up in an office and therefore are not available when needed.
2. Every member of staff should know their roles and function during a drill. Training of all management should be instituted and the disaster committee should ensure that this happens.
3. Members of staff should be informed about the regularity of drills and also about ongoing training.
4. The Disaster Committee should ensure that all plans are maintained and regularly updated. Meetings should continue to be held on a regular basis as it is currently happening. The management should take responsibility of ensuring that the hospital is adequately prepared should a disaster occur.
5. A risk analysis should be made of potential hazards or incidents that are likely to occur in the hospital on a regular basis so that the plans can be updated.
6. Evacuation exercises need to be done for the entire hospital at least twice a year and this should assist further training efforts

7. Communication is very important. An updated list of addresses and telephone numbers of all staff involved in the plan should be available to the switchboard. During the course of a disaster, joint coalition is vital. Drills should also include mock communication procedures.

   The above duties should be instituted by the Disaster Committee and the senior administrators of the hospital.

   Note: These recommendations will be presented to the senior management at an appropriate forum as soon as possible.

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APPENDIX A

Questionnaire

To complete the questionnaire, kindly place a cross in the appropriate block or complete where necessary.

Section 1: Demographics

1.State category of staff	**Clinical**	Medical	Nursing	Allied Medical	Pharmacy
	Administrator	Clinical	Logistics	Patient Affairs	Communications/IT
	Support services	Porter	Clerical	Security	Logistics

2. How long have you worked in the hospital?	Less than 1 year	
	1 – 5 years	
	5 – 10 years	
	10 – 20 years	
	20 – 30 years	
	More than30 years	

Section 2: Knowledge

3. What is a disaster?			
4. What is a disaster plan?			
5. Do you know where to find the plan?	Yes	No	Don't know
6. Do you know what drills are?	Yes	No	
7. Do staff members understand their functions during a drill?	Yes	No	Don't know
8. What is disaster preparedness?			

Section 3: Attitude

9. I do not need to know about disaster plans	Agree	Disagree	Unsure
10. Management should be adequately prepared should a disaster occur.	Agree	Disagree	Unsure
11. Disaster planning is for a few people in the hospital	Agree	Disagree	Unsure
12. Potential hazards likely to cause disaster should be identified and dealt with	Agree	Disagree	Unsure
13. Training is necessary for all health management	Agree	Disagree	Unsure
14. Do you think it is necessary to have a disaster plan?	Agree	Disagree	Unsure
15. Disaster plans need to be regularly updated	Agree	Disagree	Unsure
16. Disasters are unlikely to happen in our hospital	Agree	Disagree	Unsure
17. Disaster management is for nurses and doctors only	Agree	Disagree	Unsure
18. Disaster simulations should occur frequently in the hospital	Agree	Disagree	Unsure
19. Drills should be conducted in the hospital	Agree	Disagree	Unsure

Section 4: Practice

20. Are disaster drills done at your hospital?	Yes	No	Don't know
21. If yes, what type of drills is done?			
22. Is there ongoing training?	Yes	No	Don't know
23. If yes, how often?			
24. Is the disaster plan periodically updated?	Yes	No	Don't know
25. If yes, how often?			

APPENDIX B

INFORMATION SHEET

Hello,

I am Doctor Makhotso Moabi, a part time student studying for Master in Public Health with the University of the Witwatersrand. I'm currently in my third year of Study in the field of Disaster Management. I'm undertaking a study investigating the knowledge, attitudes and practices of the Johannesburg Management regarding Disaster Preparedness.

Purpose of study?

The hospitals all over the world have had to respond to disasters around them. Disaster preparedness is the key to effective event command. Amongst other things, preparedness involves awareness, planning and training. With South Africa winning the FIFA bid to host the 2010 World Cup, our hospitals need to be prepared in coping with the disasters that may happen. Also, we are faced with scares such as SARS and Avian Flu which, if we are ill-prepared, may cause massive casualties.

This study aims to assess the knowledge, attitudes and practices of administrators, clinical staff and support services regarding disaster preparedness in the hospital. Your assistance in this regard will be greatly appreciated.

What is expected of the participants?

This study invites participants in the hospital administration and those staff members who play a key role in disaster management. You are hereby requested to participate in this questionnaire voluntarily. The questionnaire will take approximately fifteen minutes to complete. Please complete the questionnaire, after signing the consent form enclosed herein, and seal it after filling in all the requested information. The consent form will be collected from your offices and the questionnaire will be in the enclosed envelope. The sealed envelope may be left at Casualty in a designated box to ensure confidentiality and privacy.

Participation is voluntarily

You are under no obligation to participate in this study.

Contact details: For more information, contact me at the following numbers:

Dr. M Moabi 082 925 1195 or 933 8359

Thank you

APPENDIX C

The Chief Executive Officer

Johannesburg Hospital

23 October 2006

Dear Mr Pillay

RE: Letter of Permission

I'm a part time student studying for the Masters in Public Health Degree with the University of the Witwatersrand. I'm currently in my second year of study and I'm in the field of Disaster Management. .

As part of my fulfillment of the requirements towards the Master in Public Health Degree I' wish to undertake a research on knowledge, attitudes and practices of the hospital management regarding disaster preparedness. Disaster preparedness is the key to effective event command and it involves amongst other things awareness and training. With the pending FIFA World Cup in 2010 in South Africa, we need to be equipped for the event and many others not mentioned here, such as SARS and Avian flu. Our Hospital needs to have the capacity to deal with such disasters should they occur.

The study will be a qualitative one and the study sample will be the following:

The Heads of Departments, Heads of the 3 casualties, chief porter, chief clerk, theatre matron, senior sisters for surgery and orthopedics, chief anesthetist, principal specialists, senior sisters and senior doctors in the casualty department, switchboard operator, senior pharmacist, head of security and head of transport.

The participants will be required to complete a self administered questionnaire about their knowledge, attitudes and practices with regard to disaster preparedness of the Johannesburg Hospital. The questionnaire will take about fifteen minutes to complete. Ethical clearance will be obtained from the Wits Ethical Committee. The first section of the questionnaire will deal with the demographic information. Section 2 with the knowledge about disaster preparedness. Section 3 will address attitudes and Section 4 will address practices and views on how we can address this problem. The questionnaire will be a crude format, and feedback will form part of the thesis and general articles that could be of use to clinicians and other members of staff.

The study is voluntary and participants can withdraw from it at any time should they wish to do so. An informed consent will be signed by participants prior to the study being undertaken. Confidentiality shall be protected at all times. No names of participants are required and anonymity will be upheld. The results of the study will be helpful in ascertaining whether participants have the knowledge of what a disaster is, whether disasters exist in the hospital, whether they know where to find the plan in the event of a disaster, whether it is updated or not and what their role is in the event of a disaster.

Should there be any queries, I can be contacted at the following numbers:

082 925 1195 or 933 8359

Hoping to receive a favourable response

Yours faithfully

Dr R M Moabi

APPENDIX D

Informed Consent

I hereby confirm that I have full knowledge of the study being undertaken, that I have read and understood the information sheet supplied above and that the study investigator…….informed me about the nature, conduct and benefits of the study. I have read and understood the contents of the information sheet.

I am aware that participation is voluntary and that I can withdraw from the study should I wish to do so. I also understand that I do not have to answer all the questions should I wish not to. I am also aware that the information that I will be giving will be confidential and that the results of the study will be anonymously processed. I have had sufficient opportunity to ask questions and declare myself prepared to participate in the study.

PARTICIPANT

Printed name Signature Date and time

I,…….. Herewith confirm that the above participant has been fully informed about the nature and conduct of the above study

STUDY INVESTIGATOR

Printed name Signature Date and time

WITNESS

Corrections made

1. Information on the background of The Johannesburg Hospital including the following: (Page 1)
   - Budget
   - Being voted the best public hospital
   - Folateng (its private wing)
2. Justification for the study referenced (Page 3)
3. Study aims and objectives rewritten (Page 4)
4. Review of relevant literatures (Page 5-10)

Types of disasters referenced (Page 13)

5. The aim of Disaster Management changed to Disaster Management plan (p11)
6. Process of development of a disaster plan summarised and referenced (Page 13)
7. Steps in disaster preparedness summarised and referenced (Page 14)
8. Key components of a disaster plan summarised (Page 15)
9. Study population-health care workers selected because they are the key people to be actively involved should a disaster occur.(Page 19)
10. Limitations of the study, bullet point 2,6,7 combined as well as point 3 and 5.(Page 20)
11. Section 3.1- a tabular form for each category of staff has been presented in the tabular form. (Page 25)
12. Page 26- 8% of the selected population were from the support services category which included the porter(25%), clerical (25%), security(25%) and logistics(25%)
13. Numbering of tables redone (Page 25-32)

14. The sentence-a question was not asked on whether they have seen the current disaster plans was removed(Page 38)

15. Disaster Committee is the same as the Hospital Emergency Planning committee. The name was changed to Disaster Committee. (page40)

16. Referencing style consistent with the Vancouver style.