Knowledge, Attitude and Practices of Healthcare Workers Regarding Disaster Preparedness at Rockland Hospital

A Dissertation submitted in partial fulfillment of the requirements for the award of

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Post Graduate Diploma in Health And Hospital Management

By

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(23rd Jan 2012 – 21st Apr 2012)

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April 25, 2012

TO WHOM IT MAY CONCERN

This is to certify that **Dr. Geetanjali Joshi** has successfully completed her internship in our *Organization* from January 23, 2012 to April 21, 2102. During this internship period, she has worked on **"Knowledge, Attitude and Practices of Healthcare Workers regarding Disaster Preparedness"** under the guidance of the Asstt. Medical Supdt. and other senior team members of Rockland Hospital.

She has taken keen interest in understanding the functioning of the departments and has successfully completed her internship with the Hospital.

We wish her good luck for her future assignments.

For & on behalf of Rockland Hospital

(Kitty Lalwani)
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Certificate of Approval

The following dissertation titled "Knowledge, Attitude and Practices of Healthcare Workers regarding Disaster Preparedness" is hereby approved as a certified study in management carried out and presented in a manner satisfactory to warrant its acceptance as a prerequisite for the award of **Post- Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation

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Kirti Udayai	
Anupama Sharma	

Certificate from Dissertation Advisory Committee

This is to certify that **Dr. Geetanjali Joshi**, a graduate student of the **Post- Graduate Diploma in Health and Hospital Management**, has worked under our guidance and supervision. She is submitting this dissertation titled **"Knowledge, Attitude and Practices of Healthcare Workers regarding Disaster Preparedness"** in partial fulfillment of the requirements for the award of the **Post- Graduate Diploma in Health and Hospital Management**.

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

Faculty Mentor Minakshi Gautam
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Abstract

BACKGROUND

Health being the most crucial service, from the point of view of caring & rehabilitation of injured & disposal formalities for dead, requires the highest state of alertness round the clock all 365 days of the year without any relaxation of any kind for any reason. Disasters in any form whether manmade or natural cause casualties & dislocation of different kinds of services which requires to be restored at the earliest not only to restore normal life pattern but also to bring down panic reaction at its lowest. As hospitals & emergency staff are the first persons to manage the consequences of any disaster, assessment of their preparedness is the most important for any hospital.

AIM

To determine the Knowledge, Attitudes and Practices of healthcare workers at the Rockland Hospital regarding disaster preparedness.

METHODOLOGY

Sample size of 103 respondents was taken for questionnaire and 7 respondents for interview. Respondents were included from the various departments (doctors, nurses, maintenance, security etc.). Purposive cluster sampling method was incorporated for collection of primary data. A structured questionnaire was designed on the basis of literature review and disaster manual of the organization. Pilot test has of the questionnaire being carried out and then rectified as per the need. Analysis was done on Microsoft Excel Sheet.

RESULTS AND DISCUSSION

Level of knowledge in respondents is average as per the findings. 80% respondents didn't know where to find disaster manual in their organization. 14% doctors do not know about Triaging. Attitude of the respondents was positive. They recognize the importance of disaster plans, written manual, training and drills. But practices at Rockland Hospital are very poor. Around 75% staff revealed that they did not get training at the time of joining and more than 50% did not see any mock drills during their serving tenure.

CONCLUSION

The staff at Rockland Hospital was found to have an average 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. Though they had knowledge and their attitude was acceptable, their practices in terms of the frequency of ongoing training and the frequency of regularly updating the plans were probably inadequate. The staff at Rockland Hospital is not adequately prepared to stand against an emergency situation. Gaps need to be filled in terms of updating staff regarding regular drills, ongoing training on a regular basis with inclusion of all key people in the hospital.

Acknowledgement

I have taken efforts in this project. However, it would not have been possible without the kind support and help of many individuals in the organization. I would like to extend my sincere thanks to all of them.

I am highly indebted to **Dr. Nivedita, AMS (Rockland Hospital),** for their guidance and constant supervision as well as for providing necessary information regarding the project & also for their support in completing the project.

The guidance and support received from all the members of Quality Department, Maintenance Department and Human Resources Department including Ms. Ritu, Ms. Shikha, Mr. Sarvesh, Ms. Kitty, Ms. Ruchi and Ms. Sakshi who contributed to this project, was vital for the success of the project. I am grateful to each member of Rockland Hospital for their constant support and help.

I would also like to express my gratitude towards **Mrs. Meenakshi Gautam** for their kind co-operation and encouragement at each step, which helped me in completion of this project.

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LIST OF ABBREVIATIONS

- ECHS (Ex Servicemen Contributory Health Scheme)
- DGHS (Delhi Government Health Scheme)
- TPA (Third Party Administrators)
- WHO (World Health Organization)

PART - I

INTERNSHIP REPORT

About Hospital

Rockland Hospital has redefined the healthcare delivery system in India. Its motto *"Where Caring is a Way of Life"*, is the guiding principal for the entire Rockland family. Rockland Hospital is located in Qutub Institutional area in the close proximity of the lush green Sanjay Van. Rockland Hospital is a multi-specialty Hospital, with focus on specialization with perfection. The Rockland Hospital has created a niche for itself in a short span of time both within the medical fraternity and patients. Special attention has been given to the design and anesthetics of different categories of rooms for the patient. The breath taking view of Sanjay Van and Qutub Minar is a unique sight is unimaginable in a metropolis like Delhi. The ultra modern, technically advanced operation theatres with laminar airflow and pneumatic instruments are well equipped to carry all sorts of sophisticated surgery. Post-Operative and Intensive-Care beds connected to a centralized gas supply and an advanced monitoring system are supervised by experienced and trained nursing staff.

Vision

To use multi disciplinary approach with ethical practices by a team of highly responsive, caring and efficient professionals with a constant focus on excellence in delivering medical services in patient care, continuing medical education, scientific knowledge and deliver benchmarked quality medical care.

Rockland Philosophy

Every Organization, every Society, every Nation, every Group strives for success and recognition. Each individual member of the group endeavors to be held in Universal respect and Esteem; to gain Prosperity, Wealth, Personal Fulfillment and Dignity.

Rockland Logo

Blue: symbolizes security and trust

Red: epitomizes energy and dynamism

The Rockland logo symbolizes commitment to provide world-class services while maintaining the highest standards of excellence.

The logo is dynamic and poly-symbolically imbued with emotive and conceptual values such as life and hope.

The arrow circling round to the point of origin is a symbol of continuity and integrity, as well as a personalized and holistic approach to individual care.

Dispatch Department

This department is responsible for dispatching credit bills to the various organizations under which Rockland Hospital is empanelled with. All credit bills get process at this department after the discharge of the patient. The sub sections of this department are as follows:-

- ECHS
- DGHS
- TPA
- Various Corporate

Task Performed

- Receiving and checking of credit bills for the completion of the documents.
- Complete processing of credit bills.
- Maintaining Track sheets.
- Assisting in generating monthly reports.

Gaps Identified

- Delays in receiving of bills due to late submission of bills by the IPD and OPD billing department.
- Errors in IPD bills due to pitfalls in IT billing software.
- Organization's copy of bills were not filed serially which leads to delays in retrieving the bills.

- ECHS process is a prolong process and require lot of paper work, thus before final submission, bills need to be stored. But there is a limited space to store the bills.
- Due to uncompleted documentation (not attaching referral, referral for different procedures, reports not attached, doctors notes not attached), bills were returned back to their respective places, thus causing delay in the process.
- Bills after arriving to Dispatch Office is not properly placed in the racks specific for different sub process, thus increases the risk of cross mixing of bills under different sub process.

Recommendations

- IT in association with vendor (Wipro) should do the necessary changes in the software.
- One trained person should be made responsible for checking the completion of documents and also ensuring the same.
- Executive at the front office and billing should be trained about the process and one checklist should be hanged or pasted in the front of their work area, so that they can remember to collect documents which are vital for a bill to get clear further.
- As per the storage concerns, bills after returning from the OIC signature could be scanned and stored in the system. This will make the retrieval of bills much easier and also solves the concerns of storage space also

OPD and Health Check Up Department

Health checkup department is responsible for carrying out preventive health checks at Rockland Hospital. Personnel at this department are responsible for carrying out the whole process of the Health Checks.

Task Performed

- Scheduling of the Appointments for Health Checkups and OPD.
- Coordinating with the clients for the whole Health Checkup.
- Ensuring that all the tests have been done.
- Collection of reports of Health Check from the various departments.
- Segregating and compiling of reports as per the Clients.
- Dispatching the reports to the Clients.
- Maintaining attendance of Doctors.

Gaps Identified

- There is no separate sheet / activated software for scheduling the appointments.
- All the investigation departments are not at one place, causing inconvenience to the clients, as they have to travel more.
- There is no display regarding availability timings of different doctors.
- There is separate place for collection of reports for health checkups and non health checkup clients, thus causing dispatch of health checkup reports to general counter, thus, delay in the collection and compilation of the reports.
- No receiving is taken from the client at the time of dispatch of reports.

Recommendations

- Software for scheduling the appointments should be activated with pop ups to be shown a day before the appointment day, so that the user is well informed and well prepared for the next day.
- All reports (health checks and general) should be dispatched from one counter but should be segregated and kept separately so that reports could be easily accessed.
- One receiving register or preferably an excel sheet should be prepared for keeping records of dispatched reports health checkups.
- Doctor's availability timings should be displayed at the reception or waiting area.
- All waiting areas should have some health magazines, news papers etc

INTRODUCTION

Background

As the world's population becomes increasingly concentrated in large cities, there is a visible urbanization of disasters and disaster risk. This presents rapidly budding challenges for international agencies, NGOs, and central and local governments, particularly in low-income countries where endemic poverty underpins vulnerability to disaster events. (World Disaster Report, 2010)

Disasters and the number of people affected by them have increased over the time. Disasters often disrupt progress and destroy the hard-earned fruits of painstaking developmental efforts, often pushing nations, in quest for progress, back by several decades. Thus, within India and abroad both, efficient management of disasters has received increased attention.

While the likelihood of a disaster occurring is small, the impact of a disaster can be extremely significant. Firstly, there is a direct health care impact on the population, which can be from mass trauma, an infectious agent, a chemical release, weather patterns, or other causes. Disasters also have an impact on the ability of the hospital to function. As the workload increases, the staff may also become sick and panic within the health care community may grow.

The importance of disaster management has become quite evident to every person. As the tendency to take support of violence & threat to public life to highlight demands is increasing, no city in world can be said to be free from risk of facing such cowardly acts. So the responsibility of persons who tackle victims of disaster further increases along with the incidence of such unfortunate events whether those are manmade or natural.

Public health emergency response and disaster management has become a major concern as a consequence of recent natural disasters and manmade terrorist acts. These events revealed potential vulnerability in the nation's health emergency response systems at the local level.

Hospitals are cornerstones for health care in a community, and must continue to function in the face of a disaster. An effective hospital command system is therefore crucial. Hospitals play a critical role in providing communities with essential medical care during all types of disaster. Depending on their scope and nature, disasters can lead to a rapidly increasing service demand that can overwhelm the functional capacity and safety of hospitals and the health-care system at large. (WHO)

Disaster Preparedness and Disaster Management are terms that are rarely mentioned in the organized academic training. Preparedness efforts also aim at ensuring that the resources necessary for responding effectively in the event of a disaster are in place, and that those faced with having to respond know how to use those resources. The activities that are commonly associated with disaster preparedness include developing planning processes to ensure readiness; formulating disaster plans; stockpiling resources necessary for effective response; and developing skills and competencies to ensure effective performance of disaster-related tasks.

Continuous preparedness saves lives, lessens personal suffering and loss and reduces the destruction of property and economic losses. Emergency medical assistance is the most important and immediate post-disaster need, second only to search and rescue operations. Hence, knowledge about disaster preparedness and mitigation is essential for each and every staff of the hospital. Drills and exercises should be designed to stress the community system-level response over time, and they should address event notification, communication, resource allocation, and patient management. Financial support and other incentives are needed to increase the rigor and scope of community-wide exercises to ensure that response capacity and capability meet the expectations of the public. Disasters will require local leadership, emergency responders, hospital staff, and other health care providers to manage a coordinated response.

Mobilization of hospital services for a mass emergency is only a quantitative extension of normal hospital operations and emergencies. Therefore, every hospital must be prepared to give emergency care to mass casualties and have a disaster plan.

To execute a disaster plan, the hospital should have Disaster Committee consisting of key functionaries of the hospital, viz. the Director or Medical Superintendent, Administrative Officer, Heads of Clinical Units including operation theatres and casualties, Matron, and officers in Charge of Transport, Supply, Security and Communications.

The primary task of the Disaster Committee is to assess the situation of the hospital, its capabilities, strengths and weaknesses, available resources and prepare a disaster plan for managing sudden influx of casualties on a mass scale.

The essentials of a disaster plan are:

1. An efficient system of notifying and assigning personnel to specified tasks.
2. A unified medical command.
3. A probable self – sustaining ability in the area of basic utilities and supplies for a minimum of one week.
4. Establishment of the source and methods of supply of drugs, dressing and other stores and consumables.
5. Method of identifying patients who are immediately dischargeable
6. Conversion of all usable space to provide triage, observation and treatment areas.
7. Introduction / use of special disaster medical records or medical tag that accompanies the patient at all times.
8. Establishment of a centralized public information center with a designed spokesman.
9. Security system, to minimize the presence of unauthorized individuals and vehicles in or near the reception, triage, observation and immediate care areas.

According to the Asian Disaster Preparedness Centre, key factors in a successful disaster plan are:

- *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.

- *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.

- *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.

- *Leadership*

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

- *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.

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. (Milsten, A., 2000) The consequences of a disaster will depend on the nature of the hazard as well as the vulnerability and level of disaster preparedness of the population at risk.

Disaster Preparedness and Disaster Management are terms that are rarely mentioned in the organized academic training. Hospitals and their personnel play important roles in disaster response and these vary according to the type of disaster, location of the disaster and availability of the resources. The effectiveness of hospital response is greatly enhanced by preventive integration into the process of community emergency preparedness and response planning (Baun et al, 2006) There are 2 phases in which hospitals fail to cope. In the first, treatment of some patients is delayed while the hospital continues to function. In the second, hospital-wide systems collapse. (Vivian C. Mc Alister, 2010)

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 Training and education have long been accepted as integral based nor standardized, 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.(Hsu E, Tamara L, 2006)

Drills and exercises should be designed to stress the community system-level response over time, and they should address event notification, communication, resource allocation, and patient management. Financial support and other incentives are needed to increase the rigor and scope of community-wide exercises to ensure that response capacity and capability meet the expectations of the public. Disasters will require local leadership, emergency responders, hospital staff, and other health care providers to manage a coordinated response. (Baun et al, 2006)

Physicians play a unique role in public health preparedness, as they are among the most trusted first-responders in health-related emergencies (Chen F, Hickner J, Fink K, et al). But studies suggest that many physicians are not prepared to handle public health emergency cases. A recent national survey revealed that, while 80% of physician respondents were willing to participate in the diagnosis and treatment of bioterrorism cases, only 21% felt prepared to handle the cases. (Alexander G, Wynia M, 2003)

In health care, disaster preparedness is an "orphan" entity. Health care professionals have extremely limited training in disaster preparedness (Bagatell & Wiese, 2008; Hsu et al., 2006) Standardizing approaches to surge management during disasters is the first step in quality improvement. Because disaster response is an organization-wide process, this improvement has an impact on the entire hospital.

In a study conducted by Rosemary Maud Moabi; "*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."*

Rationale of the Study

Health being the most crucial service, from the point of view of caring & rehabilitation of injured. It requires the highest state of alertness round the clock 24*7 without any relaxation of any kind for any reason. Disasters in any form whether it is manmade or natural, it cause fatalities & dislocation of different kinds of services which needs to be restored at the earliest not only to re-establish normal life pattern but also to bring down panic reaction at its lowest.

Hospital is exposed to both external and internal disasters. The external disasters such as disease outbreaks like Cholera, earthquakes etc. and internal disasters such as fire, and food poisoning. The hospital has to be well prepared and all plans need to be in place should a disaster occur.

Hospitals & emergency staff are the first persons to manage the consequences of any disaster; evaluation of their preparedness is very important for any hospital. Emergency management for healthcare facilities includes mitigation, preparedness, response, and recovery. The plans should take into account such factors like appropriateness and adequacy of physical facilities, organizational structures, man power, and communication systems.

Hospitals and their personnel play important roles in disaster response and these vary according to the type of disaster, location of the disaster and availability of the resources. The effectiveness of hospital response is greatly enhanced by preventive integration into the process of community emergency preparedness and response planning.

Thus it becomes imperative to know the level of preparedness of hospital staff in terms of their knowledge and attitude and the practices prevalent in the organization. A KAP survey is a representative study of a definite population to collect information on what is known, believed and done in relation to a particular topic, thus the study takes an opportunity to reveal the level of knowledge and the real practice in relation to disaster preparedness.

Important Definitions

Disaster

Disaster is any occurrence that causes damage, economic disruption, loss of human life and deterioration of health and health services on a scale sufficient to warrant an extraordinary response from outside the effect community or area." (WHO)

Disaster Manual

A formal written Standard Operating Procedures/Guidelines for coordinating the response of a hospital's staff in the event of a disaster within the hospital or the community.

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

Drill

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

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.

Aim

To determine the Knowledge, Attitudes and Practices of healthcare workers at the Rockland Hospital regarding disaster preparedness.

Objectives of the Study

1. To understand the policy for response to both internal and external disaster situations that may affect hospital staff, patients, visitors and the community.
2. To identify responsibilities of individuals and departments in the event of a disaster situation.
3. To determine the level of knowledge of health workers towards disaster preparedness.
4. To determine the attitudes of staff towards disaster management plans and drills.
5. To determine the current practices of health care workers with regards to disaster preparedness
6. To suggest recommendations for the same.

CHAPTER – II

METHODOLOGY

Study was conducted from 1st February, 2012 to 15th April, 2012. Study was conducted by getting the questionnaires filled up, detailed interview of the senior management and on the basis of observations.

Sample Size

Sample size of 103 respondents was taken for questionnaire survey.
Total number of employees from various departments was taken and 40% of the employees from each department were included in the study.
Divisions which were included in the study are as follows:

- Nursing
- Doctors
- HR and Quality
- Maintenance
- Housekeeping
- Security
- Front Office and Administration
- Support Staff which includes Radiology, Laboratory and Blood Bank

Detailed interview was taken from Senior Management which includes 1 MS, 1 AMS, 1 Executive Director, 1Quality Head and 1 Maintenance Head.

Purposive Cluster Sampling method was incorporated for the collection of primary data.

Procedure

Disaster management manual of the organization is studied in detail to understand the roles and responsibilities of staff during the disaster.

A list of all the staff is obtained from the Human Resource Department and 40% staff from various departments (front office, nursing, doctors, maintenance, housekeeping, HR & Quality, laboratory, radiology etc.) was included in the study.

A structured questionnaire was designed on the basis of literature review and disaster manual of the organization to assess the KAP regarding disaster preparedness.

Questionnaire is designed in both the languages (English and Hindi) and it consists of both the open ended and closed ended questions.

Questionnaire is being filled up in the presence of the researcher.

Pilot test has been done on the questionnaire and questionnaire being rectified after the pilot test.

Separate structured checklist has been designed for senior management and a structured interview is being carried out which included both the open ended and closed ended questions.

A detailed analysis of filled up questionnaires are being done to assess the level of knowledge, attitude and practice of healthcare workers.

Certain set answers were kept as variable for open ended questions, like WHO definition of disaster is set as a variable for evaluating knowledge about disaster.

Microsoft Excel is being used to analyze the results.

As Doctors and nurses are the one of the key players in emergency management, thus they are analyzed separately also to determine the level of knowledge in them.

To check the reliability of the answers given, observation method was also incorporated.

Observation was done by silently taking the rounds of the hospital and by interacting with the executives as well.

Infrastructure for firefighting was observed silently and gaps in that identified and documented.

A list of location of crash carts and fire extinguishers were taken from the Quality and were checked.

CHAPTER – III

RESULTS AND FINDINGS

Data Analysis

Department wise Segregation

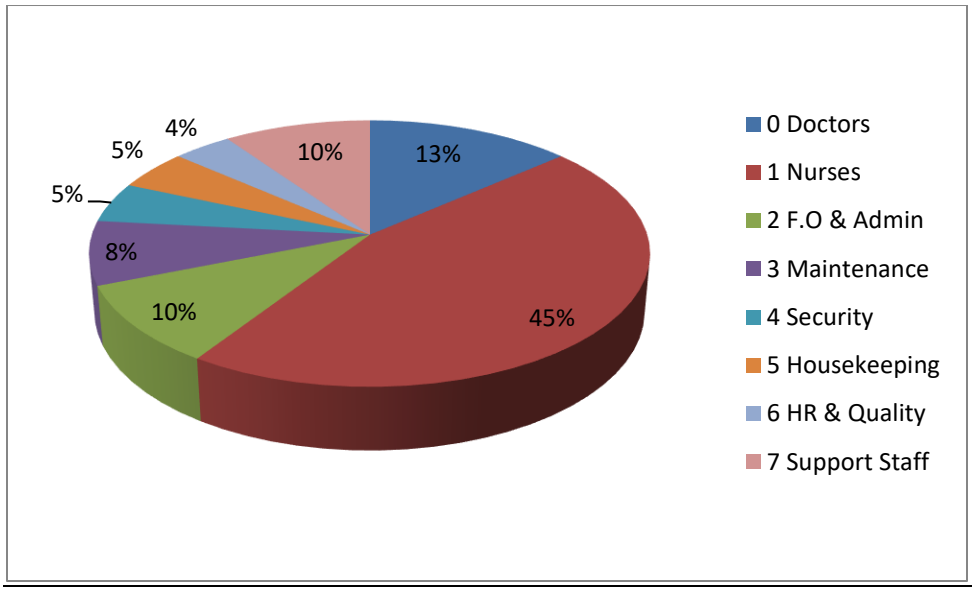

Figure 1: Distribution of respondents as per their departments.

Respondents from various departments were included in the study. Major percentage of respondents was nurses, i.e. 45% followed by Doctors (13%) secondly.

Question 1: How long worked in Rockland Hospital?

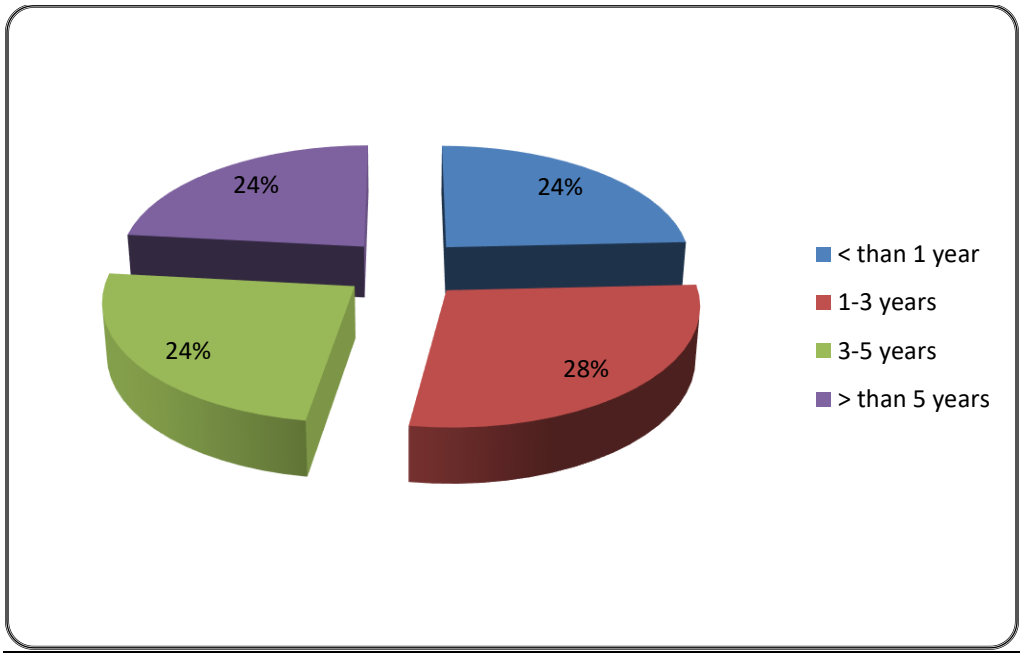

Figure 2: Pie chart showing distribution of sample on the basis of their work experience.

In the selected sample, there is almost equal distribution of respondents according to their work experience, with the maximum in between 1-3 years of experience.

Question 2: What is a Disaster?

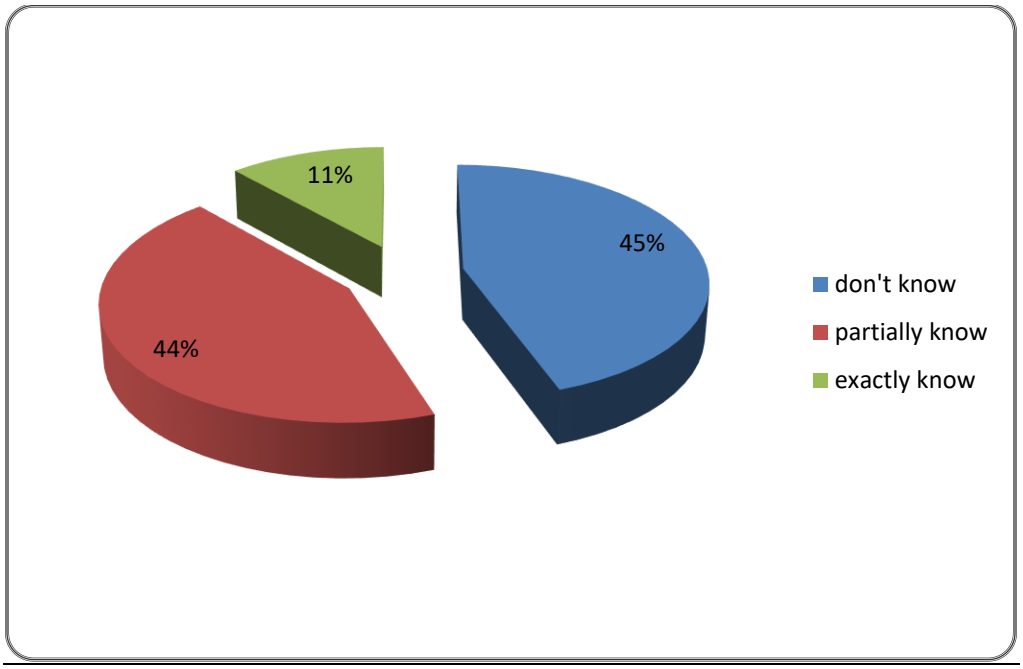

Figure 3: Distribution of sample showing knowledge of respondents about Disaster

Out of total respondents, only 11% respondents exactly knew about disaster.

Question 3: What is a Disaster Manual?

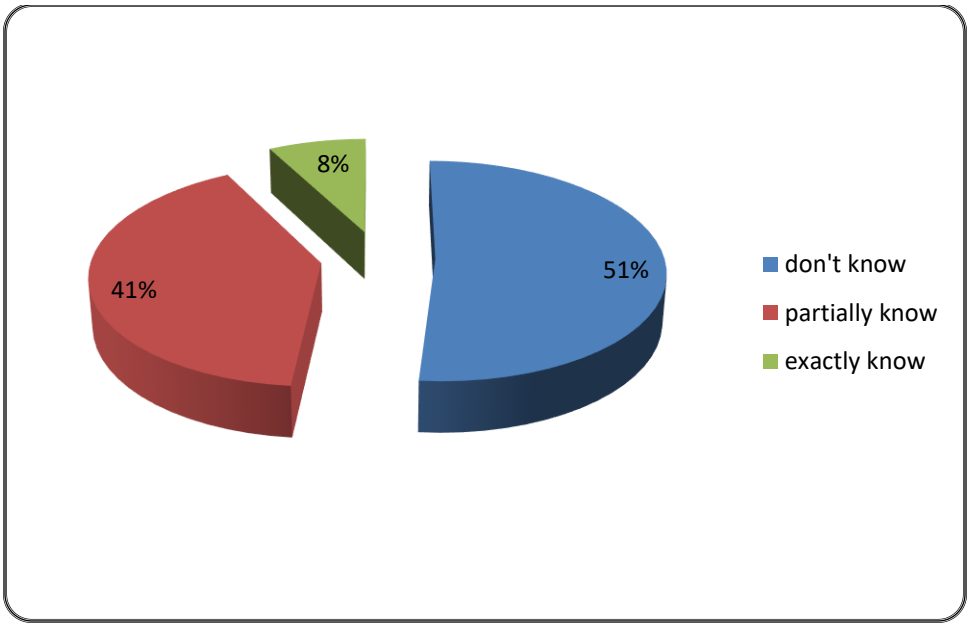

Figure 4: Distribution of sample showing knowledge of respondents about Disaster Manual

Out of total, only 8% respondents exactly knew about what is disaster manual.

Question 4: Types of Disaster and their examples?

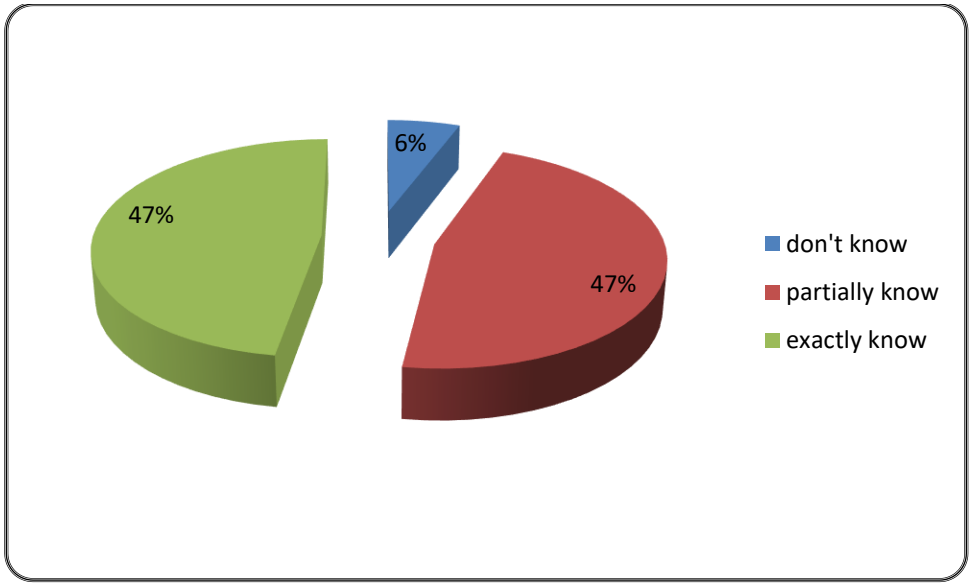

Figure 5: Distribution of Sample showing knowledge of respondents about Types of Disaster.

Out of total 47% of respondents exactly knew about types of disaster.

Question 5: Where to find Disaster Manual?

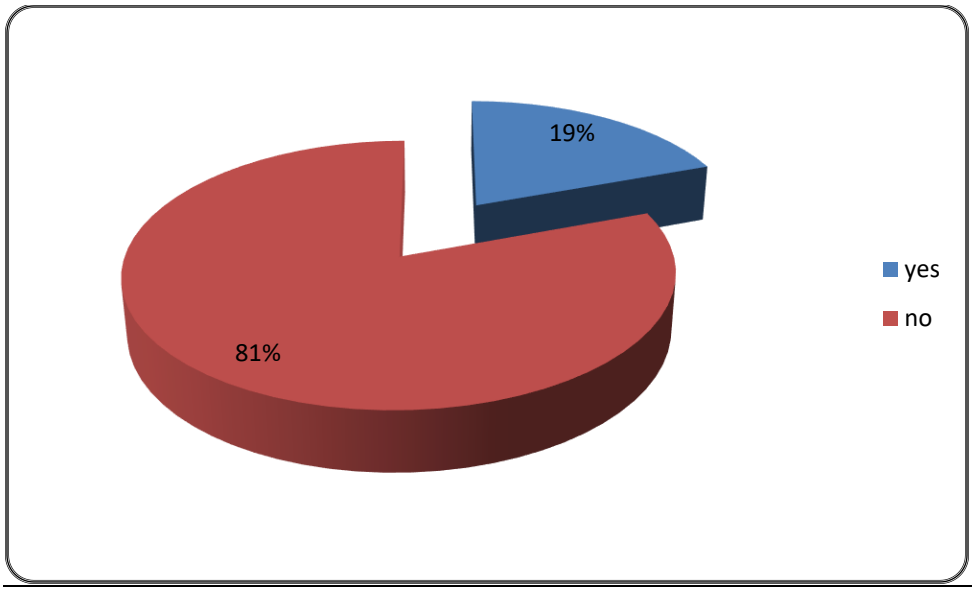

Figure 6: Distribution of Sample showing knowledge of respondents about correct location of Disaster Management manual of their Organization.

81% respondents didn't know the place to find the disaster manual of their department in the Organization.

Question 6: Number of Codes in the Organization.

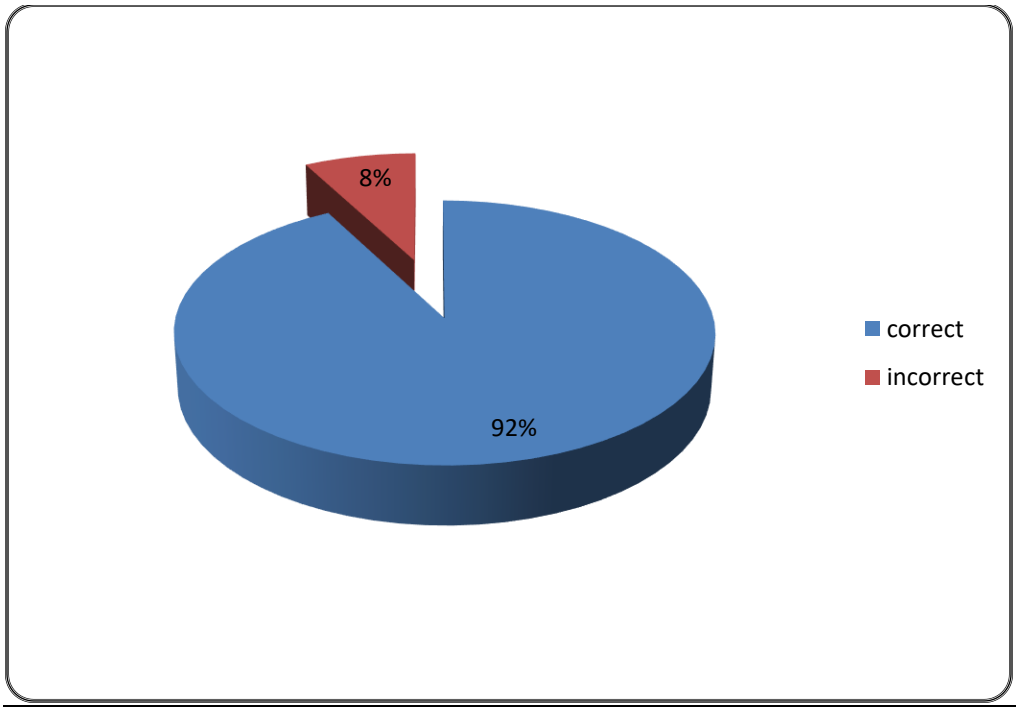

Figure 7: Distribution of Sample showing knowledge of respondents about number of codes in their Organization.

92% respondents have the knowledge about the number of codes operational in the organization.

Question 7: Knowledge about various codes in the Organization.

100% respondents have correct knowledge regarding various codes

Question 8: Types of Fire Extinguisher.

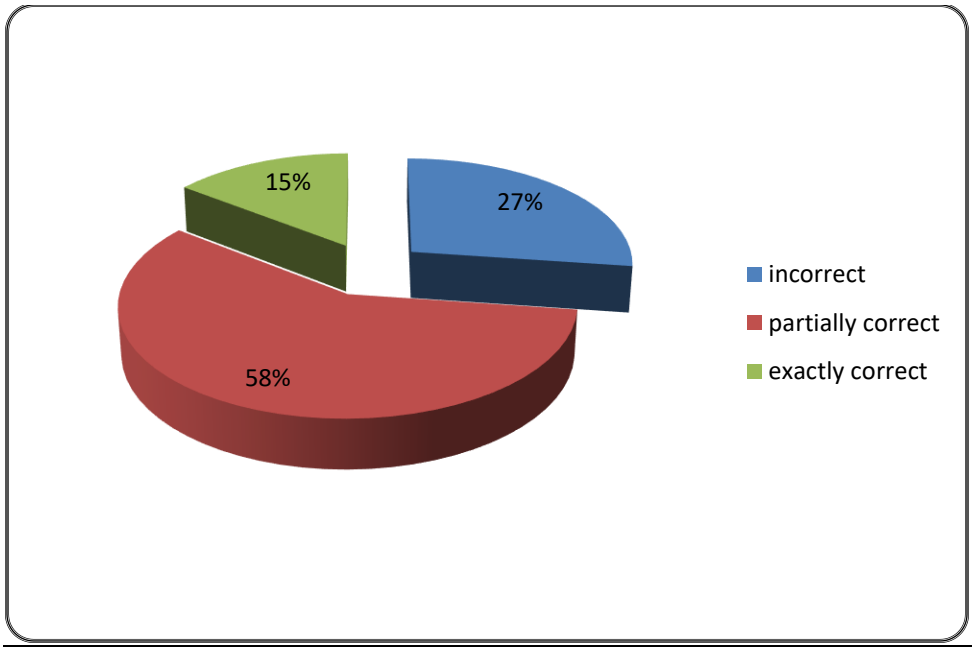

Figure 8: Distribution of Sample showing knowledge of respondents about type of Extinguisher available.

Only 15% respondents exactly knew about the types of portable extinguisher available and even 27% respondents gave incorrect answer that oxygen type portable extinguisher is also available which actually increases the fire.

Question 9: Where is nearest fire extinguisher placed?

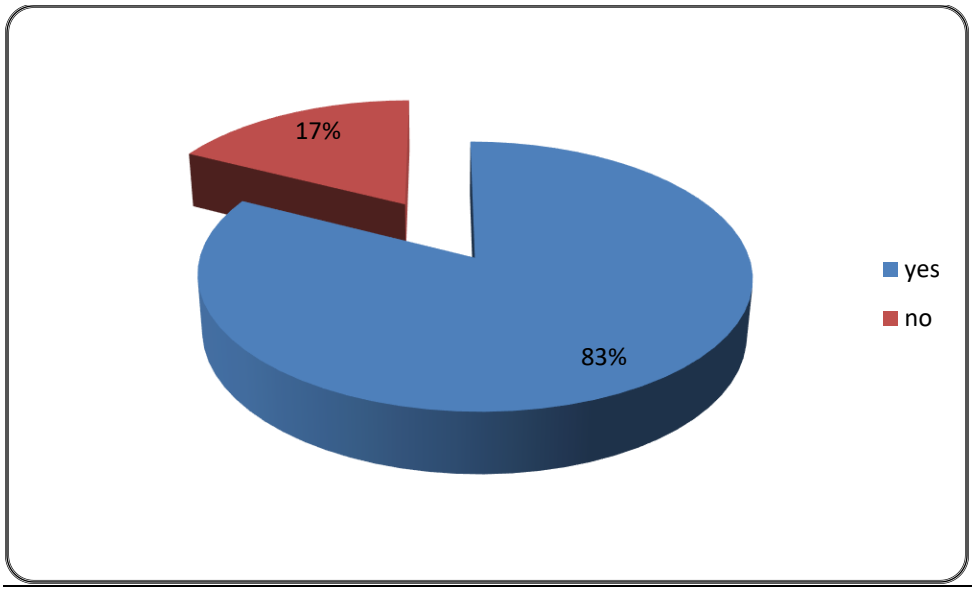

Figure 9: Distribution of Sample showing knowledge of respondents about nearest fire extinguisher.

83% respondents replied that they have knowledge about the location of the nearest fire extinguisher and out of that 96% gave the correct location of the fire extinguisher.

Question 10: Location of nearest fire extinguisher.

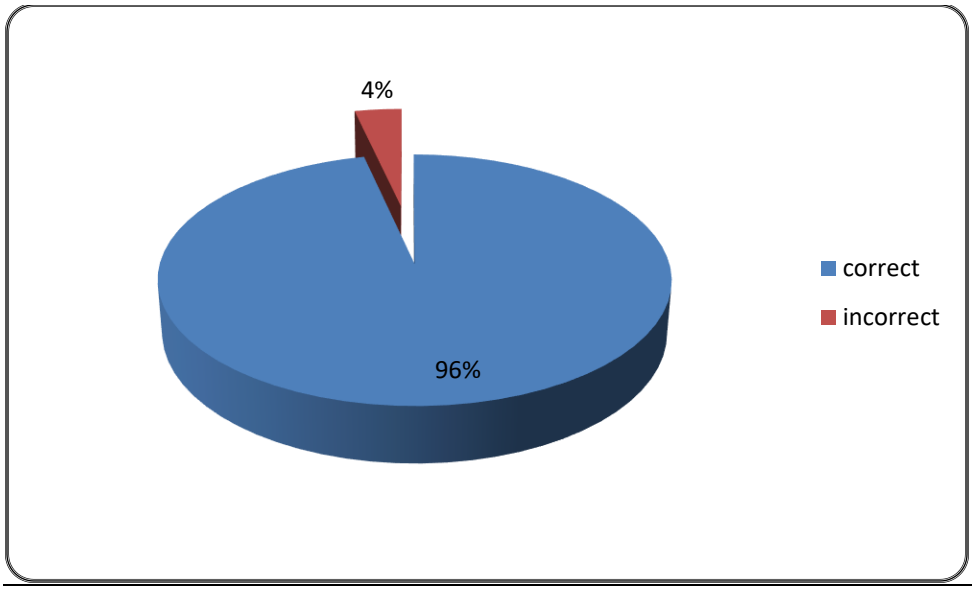

Figure 10: Distribution of Sample showing knowledge of respondents about correct location of nearest fire extinguisher.

Out of those who knew about the nearest fire extinguisher, 4% didn't know about the exact location of the nearest fire extinguisher.

Question 11: How to operate fire extinguisher?

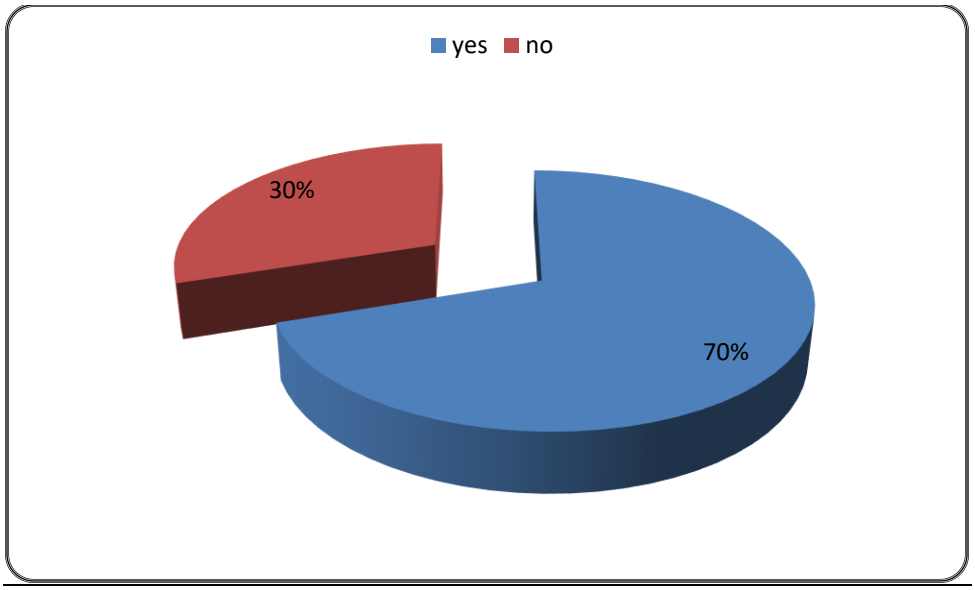

Figure 11: Distribution of Sample showing knowledge of respondents about correct location of nearest fire extinguisher.

30% respondents do not know to operate fire extinguisher.

Question 12: Fire exits in the Organization

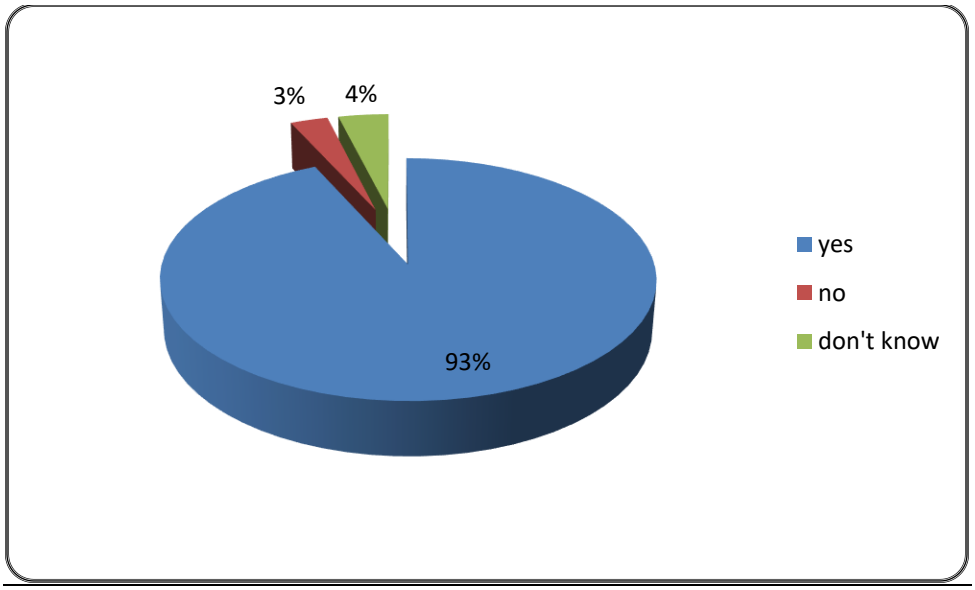

Figure 12: Distribution of Sample showing knowledge of respondents about fire exits in the organization

7% respondents replied either organization does not have fire exits or they do not know that organization have fire exits.

Question 13: Nearest fire exit

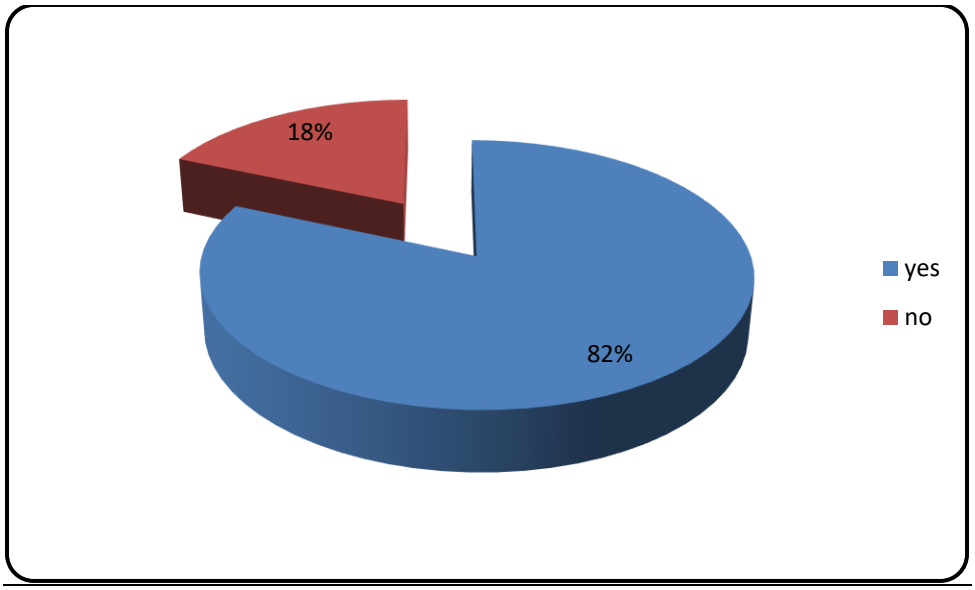

Figure 13: Distribution of Sample showing knowledge of respondents about nearest fire exit in the Organization

18% respondents did not know the nearest fire exit from the place they were at.

Question 14: Location of nearest fire exit.

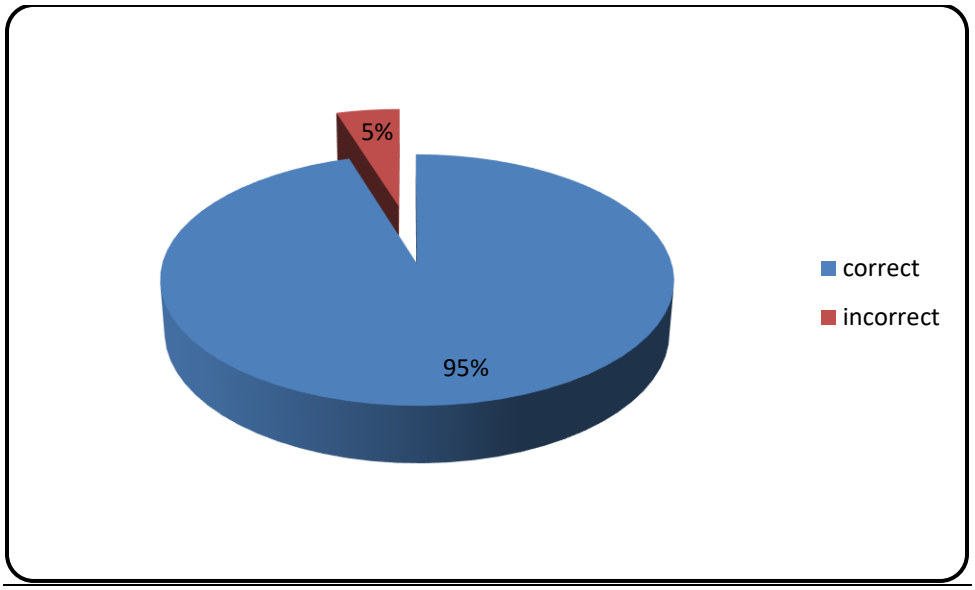

Figure 14: Distribution of Sample showing knowledge of respondents about correct location of nearest fire exit

Out of 82% who knew the nearest fire exit, 5 % could not give the exact location of the fire exits.

Question 15: What is Incident Command Nucleus?

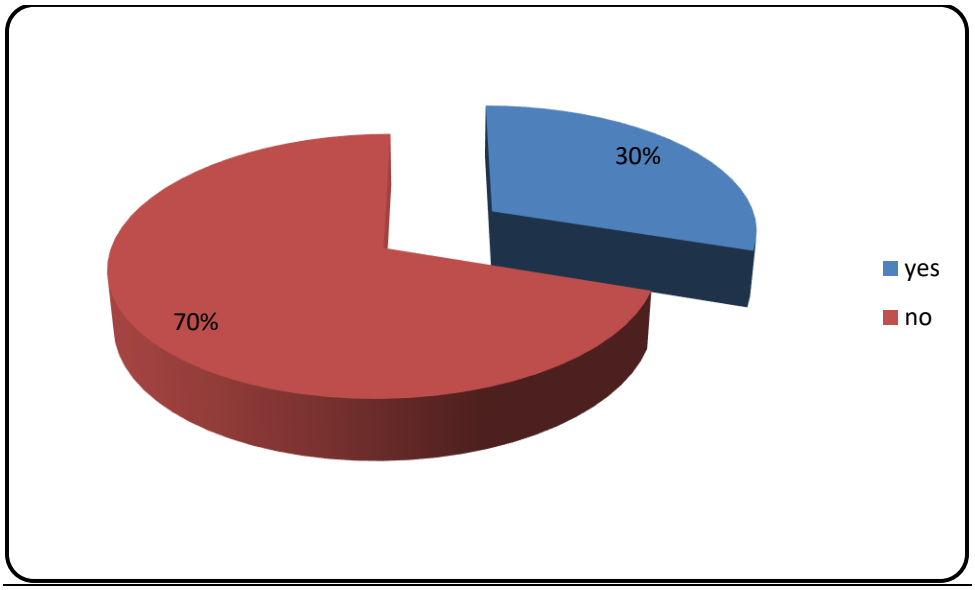

Figure 15: Distribution of Sample showing knowledge of respondents about Incident Command Nucleus

70% respondents didn't know about Incident Command Nucleus.

Question 16: Head of Incident Command Structure?

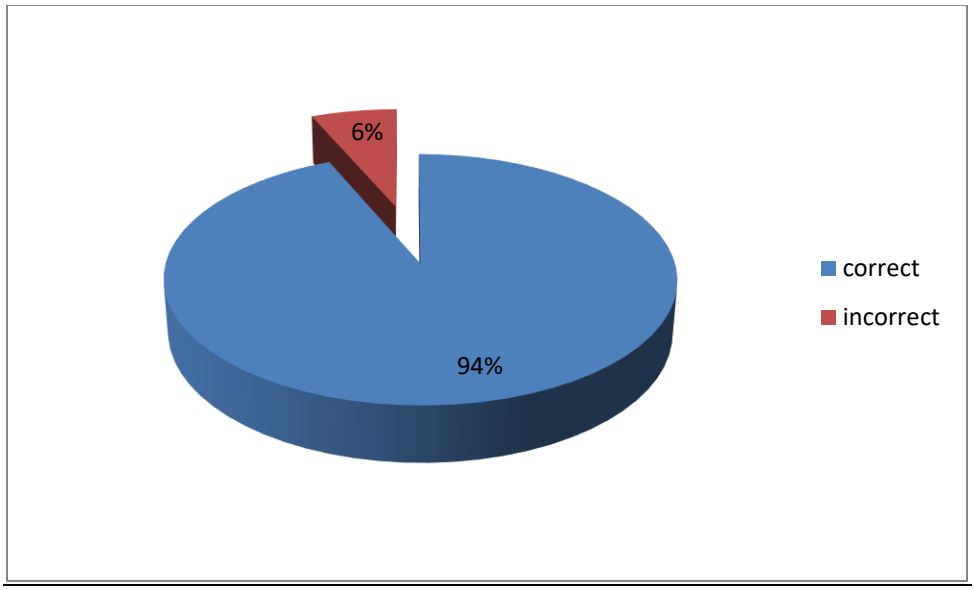

Figure 16: Distribution of Sample showing knowledge of respondents about head of the Incident Command structure.

Out of those who know about Incident Command Nucleus, 6% respondents did not know that who heads the Incident Command Structure.

Question 17: What is Disaster Control Room?

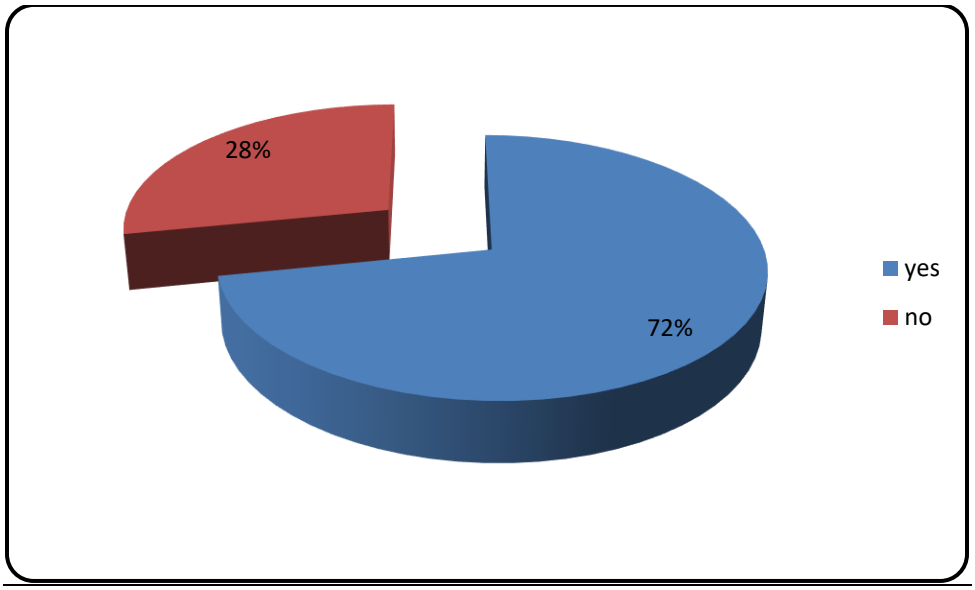

Figure 17: Distribution of Sample showing knowledge of respondents about Disaster Control Room.

28% respondents didn't know about Disaster Control Room.

Question 18: Location of Disaster Control Room

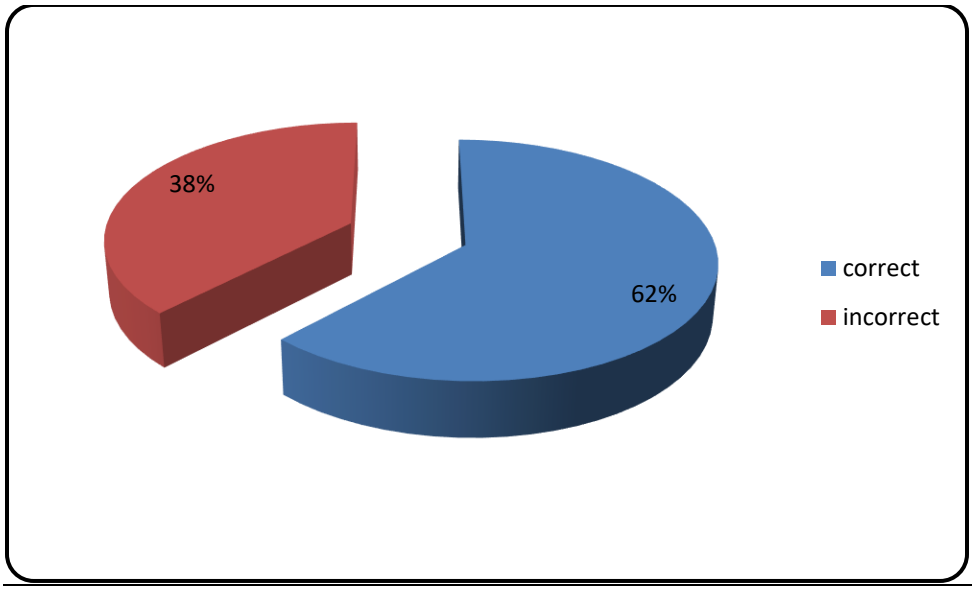

Figure 18: Distribution of Sample showing knowledge of respondents about correct location of Disaster Control Room.

Out of those who know about Disaster Control Room, 38% gave incorrect location of disaster control room.

Question 19: What is Triaging?

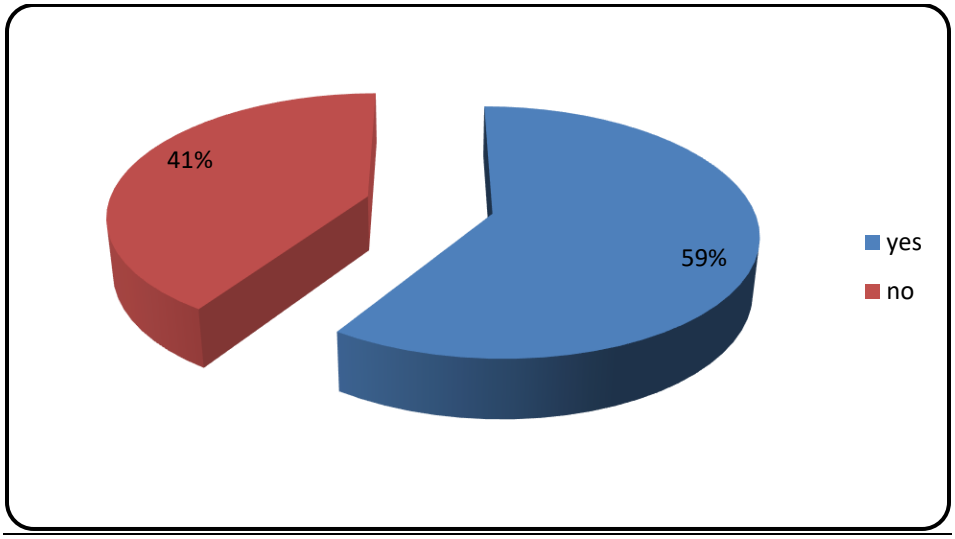

Figure 19: Distribution of Sample showing knowledge of respondents about Triaging

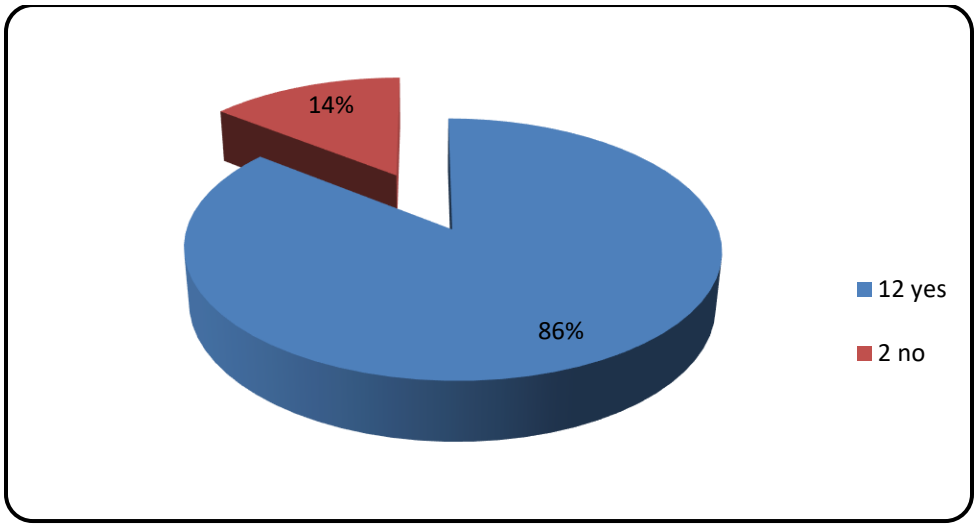

Figure 20: Distribution of Sample showing knowledge of Doctors about Triaging

41% respondents out of total respondents did not have knowledge about Triaging and out of total Doctors 14% didn't about what Triaging is.

Question 20: Whether Organization practices color codes?

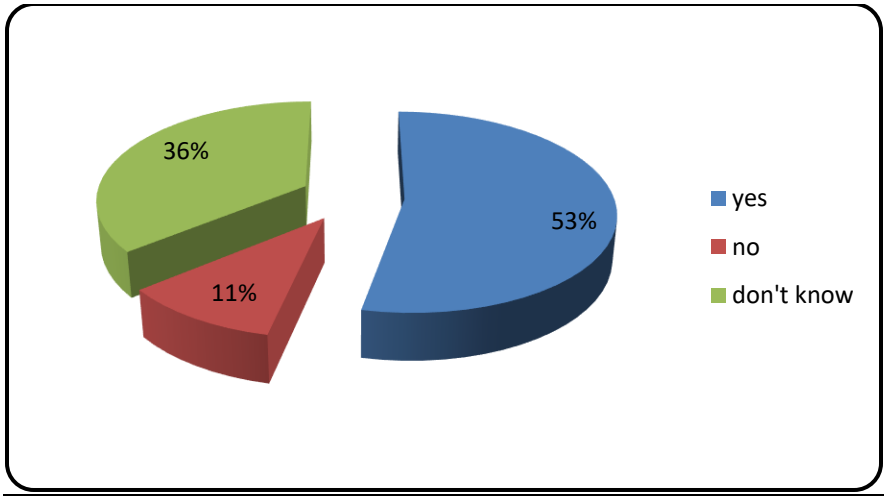

Figure 21: Distribution of Sample showing knowledge of respondents about practice of Triaging at Rockland Hospital

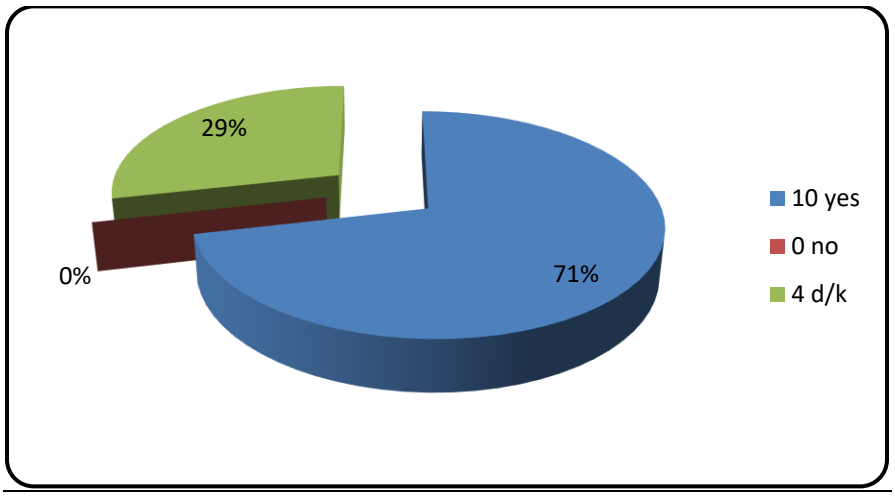

Figure 22: Distribution of Sample showing knowledge of Doctors about practice of Triaging at Rockland Hospital

47% respondents replied either the organization does not practice triaging codes or they are not aware that the organization practices it. Out of total Doctors, 29% responded that they are not aware that Organization practices Triaging or not.

Question 21: Knowledge about Triage Codes.

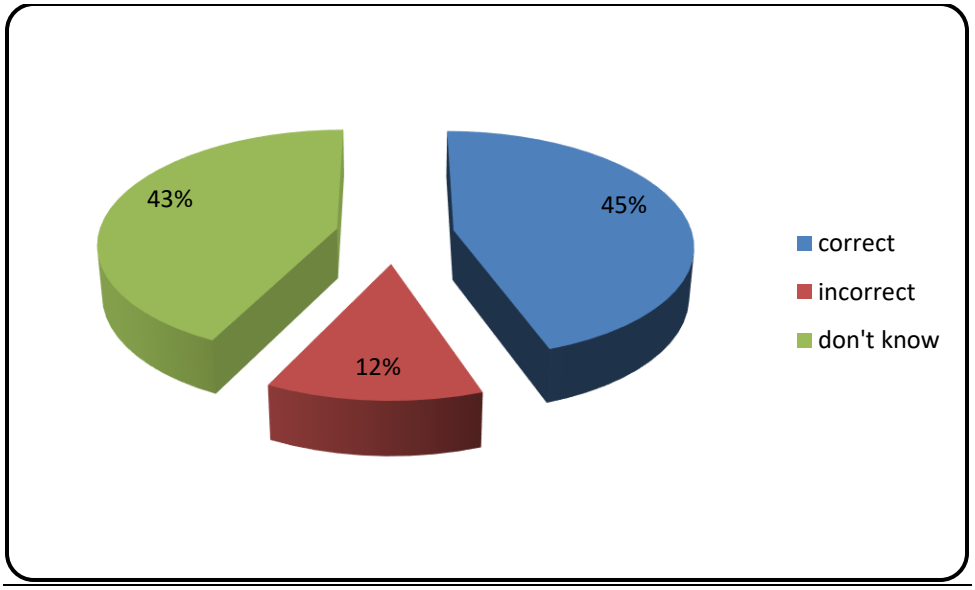

Figure 23: Distribution of Sample showing knowledge of respondents about correctness of Triage codes.

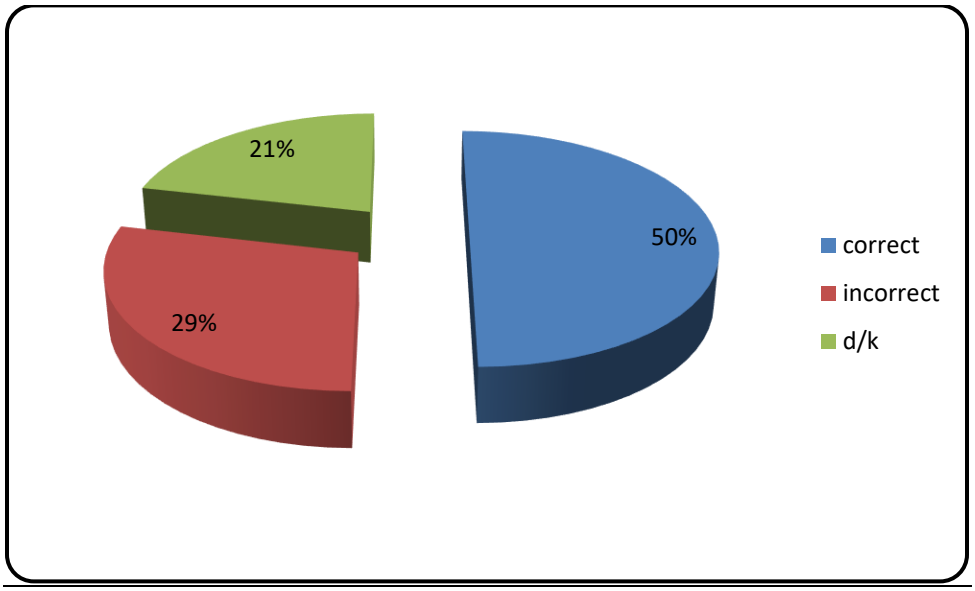

Figure 24: Distribution of Sample showing knowledge of Doctors about correctness of Triage codes

57% respondents did not know about the correct matching of the triaging codes. Even, 50% of the Doctors who were involved in the study, either they gave incorrect responses or they simply replied that they do not know the correct response.

Question 22: What is a mock drill?

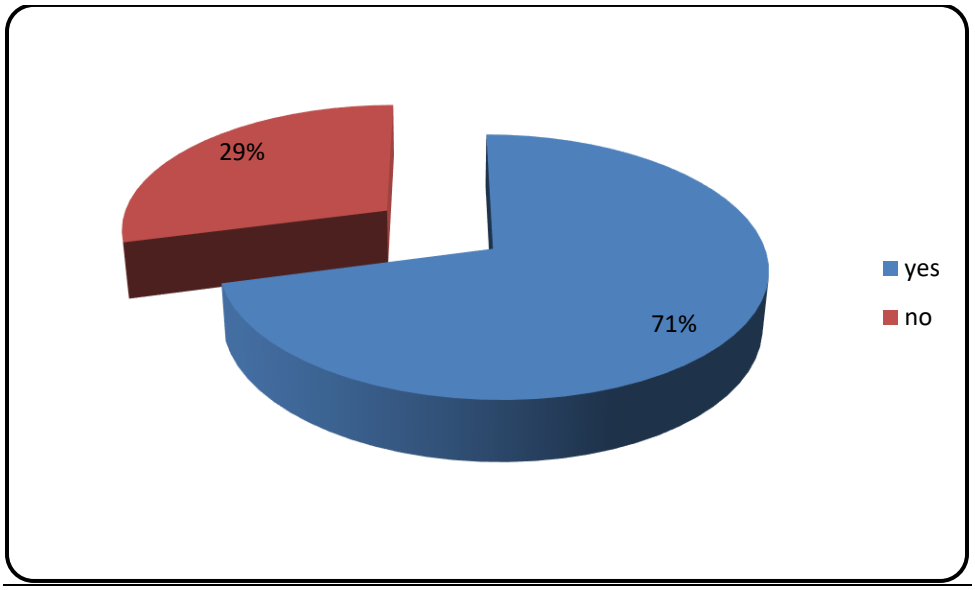

Figure 25: Distribution of Sample showing knowledge of respondents about Mock drills.

29% respondents do not know about mock drills.

Question 23: What to do during a drill?

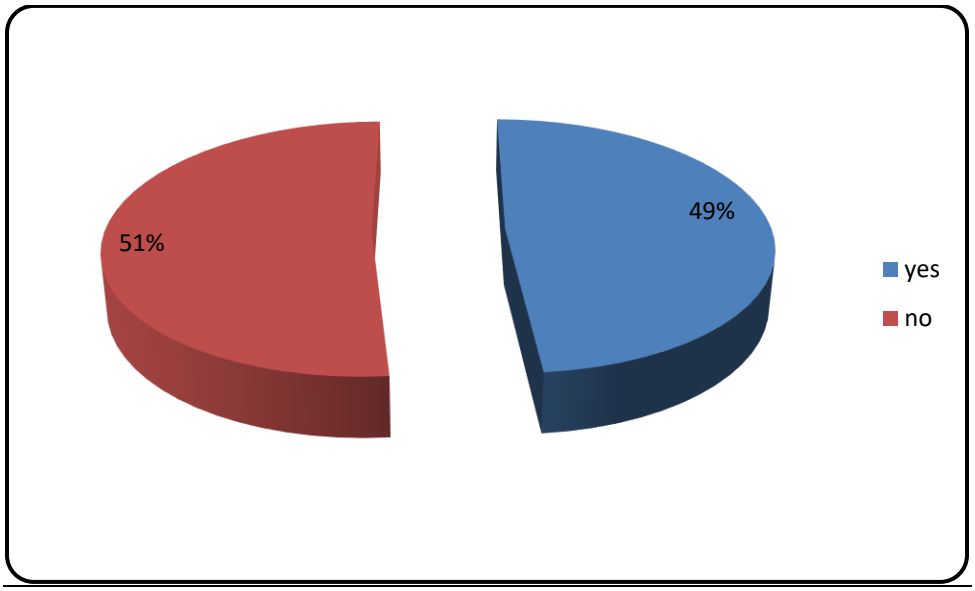

Figure 26: Distribution of Sample showing knowledge of respondents about action to take during a drill

Out of total respondents, 51% do not know about the actions to be taken during a drill.

Question 24: Information to the media.

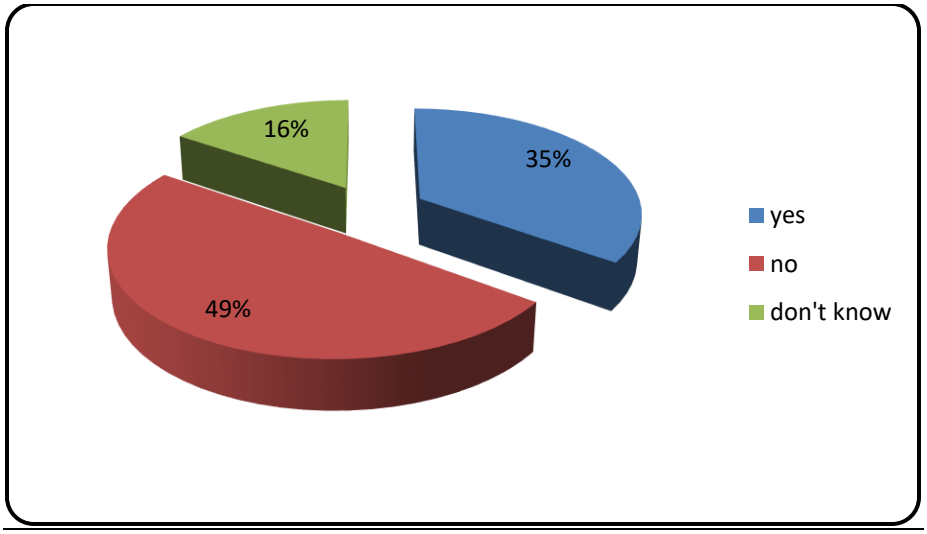

Figure27: Distribution of Sample showing knowledge of respondents about media briefing policy

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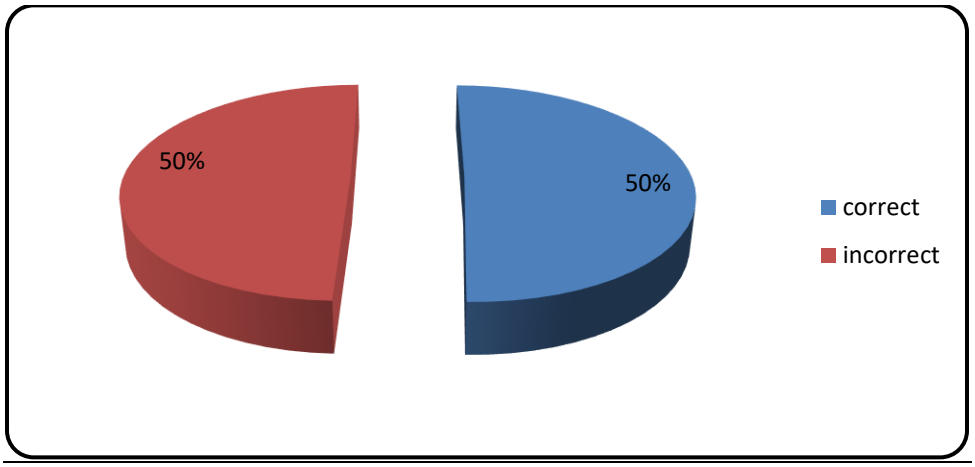

Figure 28: Distribution of Sample regarding correctness of knowledge of respondents about media briefing policy

35% respondents replied that they can give information to the media during disaster and 16% didn't know about this. Only 50% respondents said that they will refer the query by media to the higher management or spokesperson of the Organization.

Attitude towards Disaster Preparedness

Table below summarizes the responses received as regards attitudes to disaster preparedness by the Rockland Staff.

S. No.		Agree	Disagree
1	I do not need to know about disaster plans	5%	95%
2	Disaster can be handled without any preparation	35%	65%
3	Disaster preparedness is for nurses and doctors only	2%	98%
4	Training is necessary for each and every staff	100%	
5	Written disaster manual is necessary	100%	
6	Disaster manual should get update regularly	89%	11%
7	Disaster is unlikely to happen in the Organization	13%	87%
8	Disaster mock drills must occur frequently	97%	3%

Table 1: Attitude of staff towards Disaster Preparedness.

The above table illustrates that staff at Rockland 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. 100% felt that training is necessary for each and every staff of the Hospital and there should be a written manual for the Organization. 98%_respondents believe that disaster planning and management is not for nurses and doctors only. 11% respondents have negative attitude towards update of manual. 13% respondents believe that disaster is unlikely to take place in this Organization. 97% respondents have positive attitude towards mock drills and they believe that drills must occur frequently in the hospital.

But there were 11% respondents who said that disasters can be handled without any prior preparation.

Practice at Rockland Hospital

Question 34: Training for managing Disaster at the time of joining.

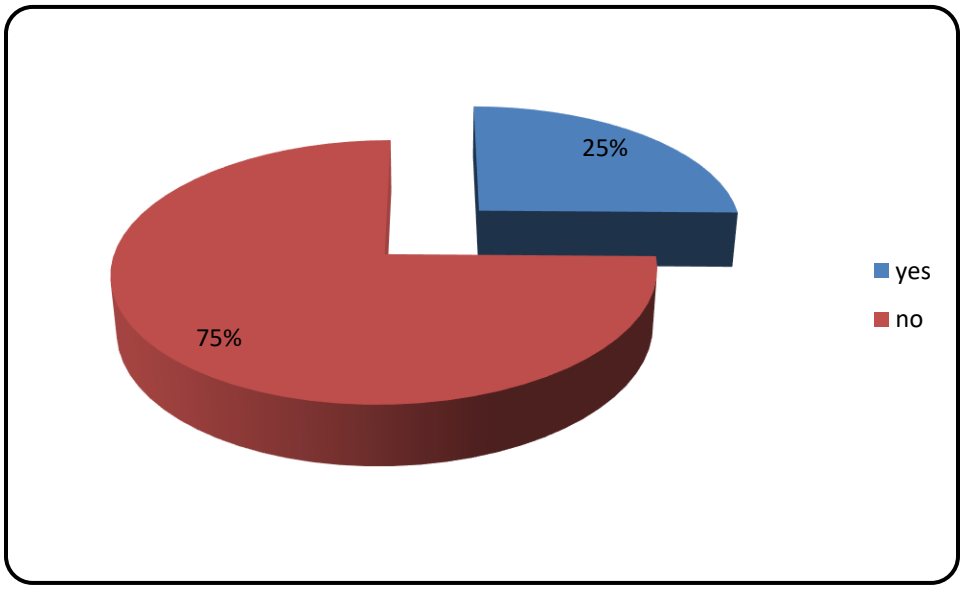

Figure 29: Distribution of Sample showing Practice towards Disaster preparedness at the time of joining.

75% respondents did not get the training for disaster at the time of joining.

Question 36: Practice regarding Mock drills.

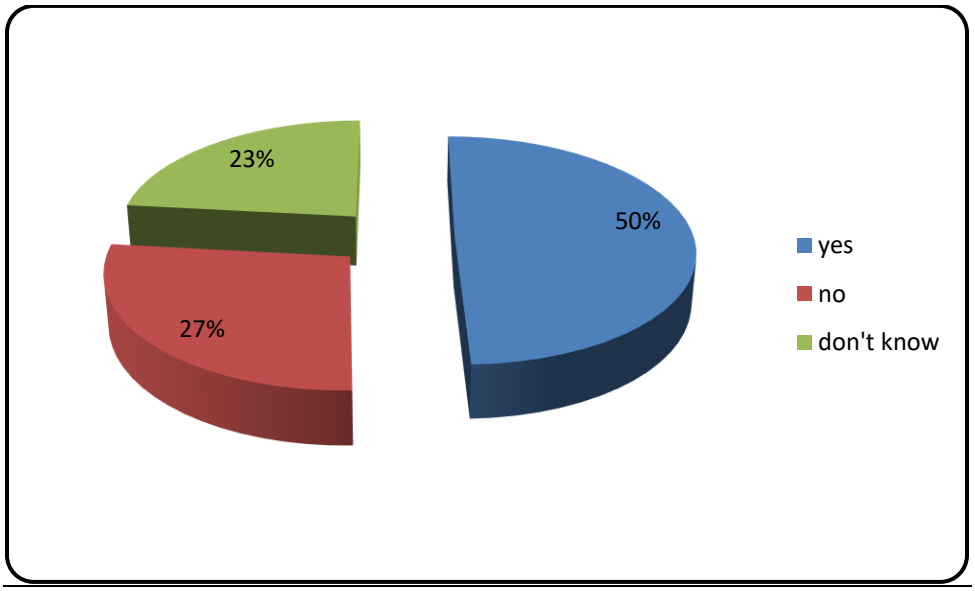

Figure 30: Distribution of Sample showing Practices follow regarding Mock Drills.

50% respondents replied that mock drills are not conducted in the hospital or they are not aware if it is being done.

Question 38: Practice regarding regular training.

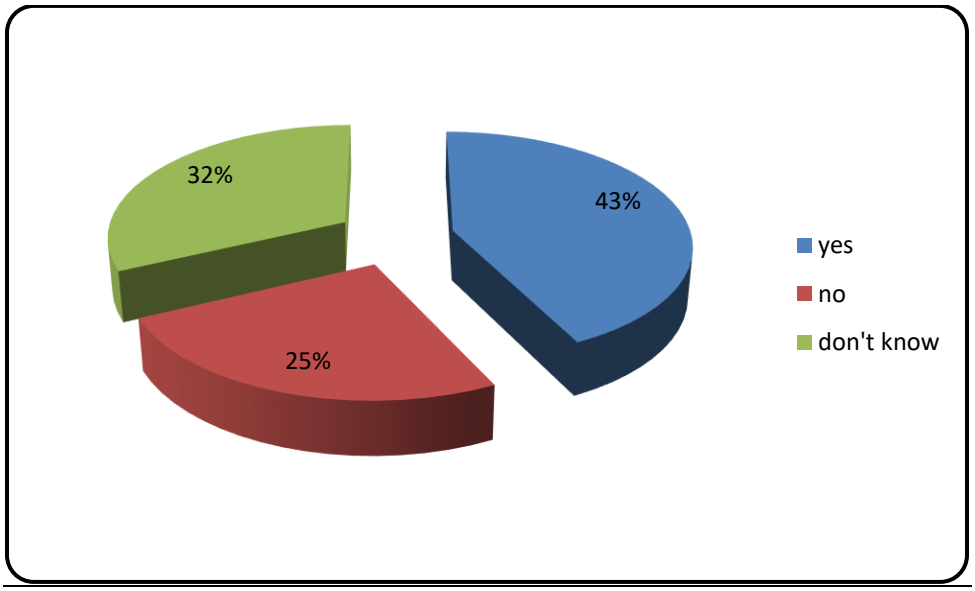

Figure 31: Distribution of Sample showing Practice follow regarding Regular Training

Only 43% respondents said that there is ongoing training program for disaster preparedness.

Question 39: Frequency of Training.

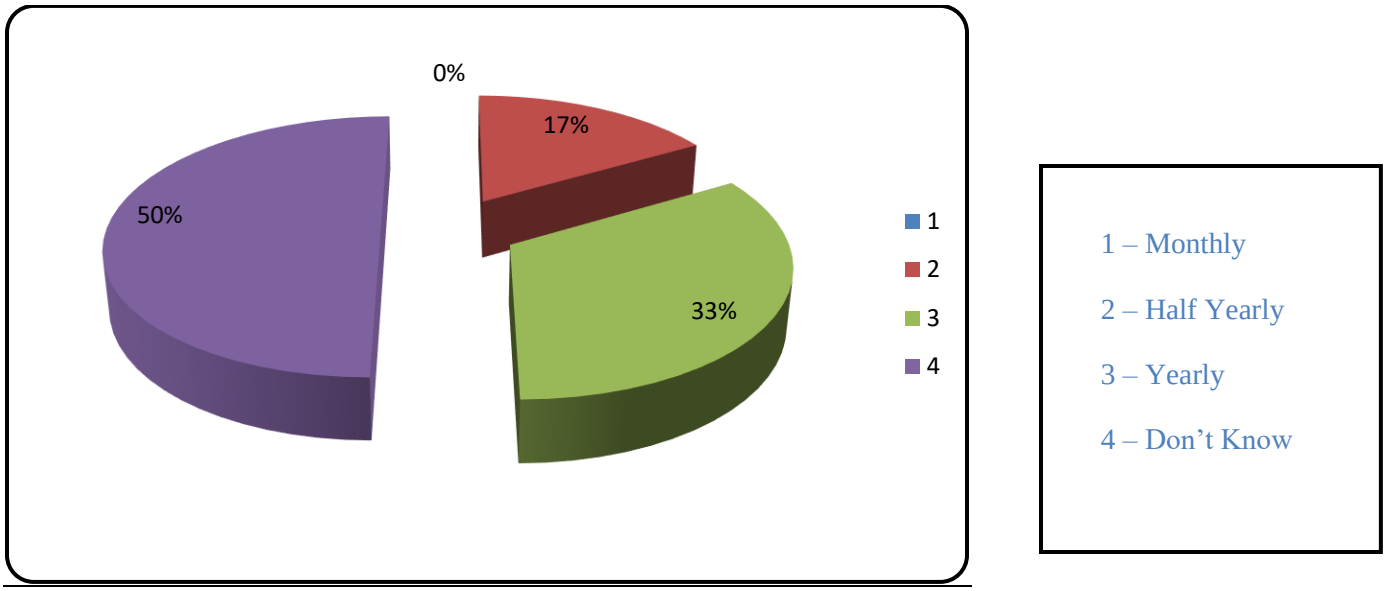

Figure 32: Distribution of Sample showing Practice follow regarding frequency of training

50% respondents replied that they are not aware of the frequency of training and 33% replied that it is done yearly.

Question 40: Practice follows regarding manual update

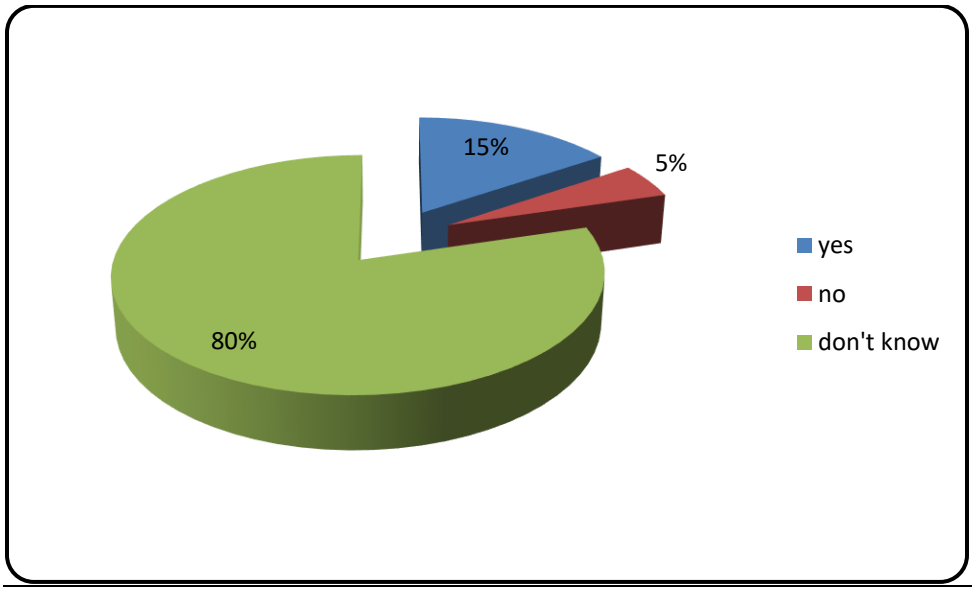

Figure 33: Distribution of Sample showing Practice follow regarding manual update

80% of the respondents are not aware if manual is updated.

Question 41: Frequency of Manual update

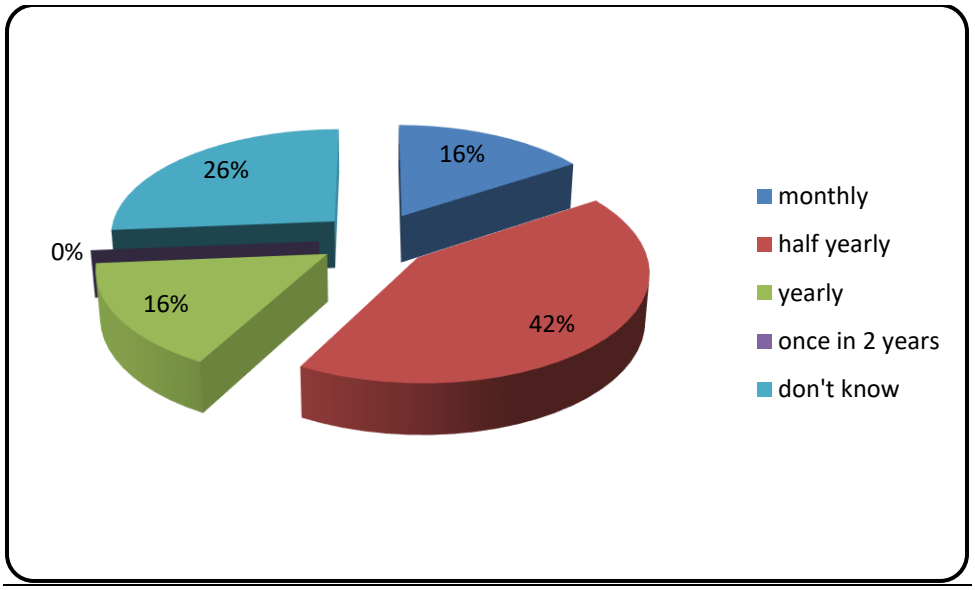

Figure 34: Distribution of Sample showing Practice follow regarding frequency of manual update

42% respondents stated that manual is updated half yearly and 26% are not aware about this practice

Question 42: How to manage workload during Disaster?

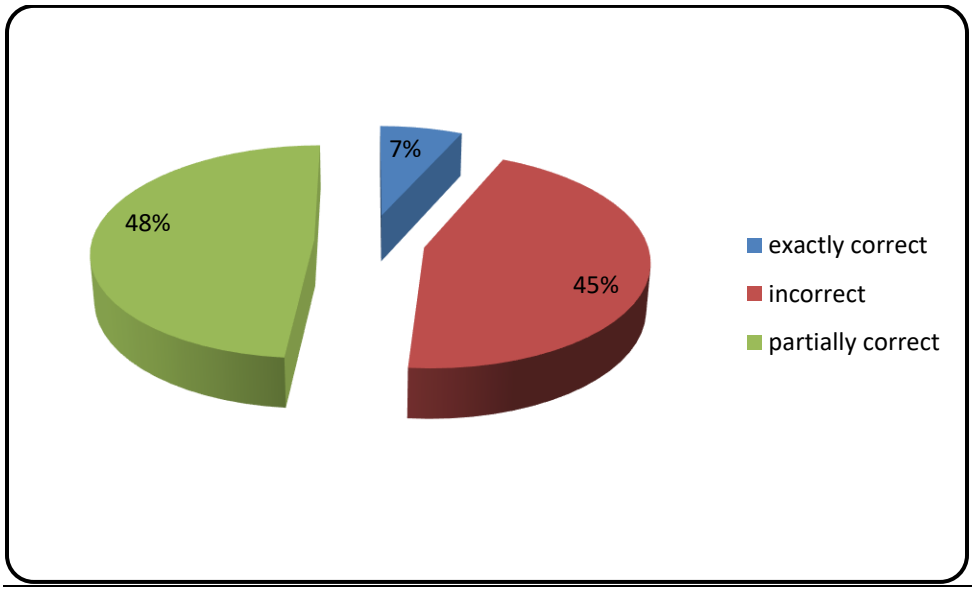

Figure 35: Distribution of Sample showing correctness of responses regarding management of workload during disaster

Only 7% respondents exactly knew that what they need to do to manage workload during disasters.

Observations / Gaps Identified

Gaps identified are listed under various sub headings as follows:

Infrastructure

- Floors are not indicated with the respective floor numbers.
- Fire exit / exit signs are not written in Hindi as well as in English at every exit.
- There are no fire exit signs in between the corridor.
- Precaution note, "do not use lift in case of fire" is not present at every lift or present in one language only.
- Fire exits are closed with lock and chain in 2nd and 3rd floor (ward area) only to restrict the unwanted movement of the attendants.
- Stair turns are filled up with racks and small cupboards that can cause obstruction while evacuation during any disaster situation.
- No fire alarm system at 4th and 5th floor and in addition to this 5th floor has MRD which contains important documents.
- No sprinkler system in the hospital other than the basement, only smoke and fire detectors are present.
- Basement sprinkler system is also not functional due to non - functional water tanks.
- Smoke detectors are not in function as are not attached to control panel.
- There are no fire resistant doors in the organization.
- Hose pipe in one floor is covered with a rack, which restrains visibility of the Hose pipe.
- Wet Risers are not functional as presently there is no water in the underground water tanks especially kept for extinguishing fire.
- Side space for movement of fire extinguisher van is very limited around the hospital.
- Public address system is poorly audible at all areas of the hospital.
- There is no display of important contact numbers in the Disaster Control Room.

Training Gaps

- There is no scheduled training program for staff of the hospital regarding disaster preparedness. According to disaster manual, extensive training would be conducted and mock drills would be conducted half yearly which is not done in real.
- There is no defined responsibility and accountability for the training of the staff.
- Training for the staff is at departmental level and HOD's of various departments are responsible for their training. There is monthly record sheet for training.
- There is no schedule for mock drills of disaster.
- No active reporting system for various training and mock drills.
- Press briefing policy is being stated in the manual but this is not known to even any of the top management personnel.
- There is no review meeting for disaster preparedness. According to the manual, the hospital safety committee will meet **once in every six months** to review the Disaster Management Plan and preparedness of the hospital for any mass emergency.

A detailed analysis of in – depth Interview is being done and some key findings of the analysis are as follows:

- Management has not done any risk assessment for the organization. Two of the respondents said that risk assessment has been done but they could not explain that how it is being done and to which disaster their organization is most prone to.
- Organization have written manual for Disaster management but organization do not have fixed schedule to update the manual. Most of the respondents said manual is updated "as and when required"
- There is no separate budget for Disaster preparedness. As per one respondent, "the budget is allocated for quality department and it covers the budget for emergency preparedness."

- Out of 7 respondents, 5 did not know the frequency of training of various codes in their organization.
- Every respondent said that they have an active reporting system but in actual it is not being practiced. Reporting sheet is available for code blue only which is not being practiced too. When respondents asked to brief about reporting system, no one could explain about that.
- As per the manual, there should be a review meeting on emergency preparedness half yearly, but only one respondent could correctly replied and rest could not replied. As it is not being practiced, so none other respondents knew about it.
- There is no policy for offsite disaster management. As per one respondent: offsite disaster can be managed at the time of requirement; there is no need of separate offsite preparedness plan.
- At last, most of the respondents believe that there should be scheduled training programs and frequent drills must occur, so that at the time of emergency, organization can have trained man power and can stand against it effectively.

CHAPTER - IV

DISCUSSION

This study establishes a baseline assessment of emergency preparedness and responses at Rockland Hospital. The study focused on Knowledge, Attitude and Practice of Rockland Staff about Disaster Preparedness.

There were respondents from various departments. Though doctors and nurses are not the only staff necessary for disaster preparedness, they form the major segment of the respondents, as assessment of their level of knowledge and attitude is necessary for any organization. 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. As per this study, more than 50% doctors did not know about the correct matching of Triage codes. Also in a study by City of Fort Worth Public Health Department in 2006 reported a very low level of competency in physicians regarding disaster preparedness.

The level of knowledge about definition of disaster is very low in respondents but they are aware of what disaster is in general. Respondents could explain it by giving examples of disaster.

Disaster manual consist of Standard Operating Procedures and guidelines to be followed at the time of disaster. More than 80% respondents did not know where to find the disaster manual in their organization. Written disaster manual is necessary for every organization to have a unified command system. And for the same, Incident command nucleus is being made, but very few respondents knew about Incident command nucleus.

JCI require hospitals to have a disaster plan and to periodically run both internal and external disaster drills. But as per this study, there is very less training given to staff. Even around 75% staff revealed that they did not get any training at the time of joining and also more than 50% respondents said they did not see any mock drills during their serving tenure.

As per the study, attitude of most of the respondents was positive. Respondents recognize the importance of disaster plans, written manual, training and drills. Organization pays very least interest in this area due to cost factor associated with it. The prime focus of every organization's management is at revenue generating sectors only. Thus financial support for training and drills are almost not applicable.

Preparing for disasters is a daunting task; it is much needed for hospitals to perform risk assessments and readiness assessments. Once these are done, it will be a far more manageable task to fill up the identified gaps. Until such time as these assessments are done, we are all at risk of being found unprepared when the disaster strikes. Thus, it is incumbent on hospitals to take the initiative on this issue seriously.

CHAPTER - V

CONCLUSION AND RECOMMENDATIONS

Hospital disaster management provides the opportunity to plan, prepare and when needed enables a rational response in case of disasters/ mass casualty incidents (MCI). Disasters and mass casualties can cause great confusion and inefficiency in the hospitals. They can overwhelm the hospitals resources, staffs, space and or supplies. Lack of any tangible plan to fall back upon in times of disaster leads to a situation where there are many sources of command, many leaders, and no concerted effort to solve the problem. Everyone does his/ her own work without effectively contributing to solving the larger problem of the hospital. Therefore, it is essential that all Hospital Disaster Management Plans have the primary feature of defining the command structure in their hospital, and to extrapolate it to disaster scenario with clear cut job definitions once the disaster button is pushed.

The staff at Rockland Hospital was found to have an average 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 knowledge and their attitude was acceptable, their practices in terms of the frequency of ongoing training and the frequency of regularly updating the plans were probably inadequate. The findings of the research were that selected health care workers at the Rockland Hospital were aware of the disaster preparedness and its plans. Their attitudes towards the plans and drills were largely positive. However, the practices were underprovided and work still needs to be done in regard to induction training, ongoing training, and performance of drills and the frequency of regular updating of the plans. The staff at Rockland Hospital is not adequately prepared to stand against an emergency situation. Gaps need to be filled in terms of updating staff regarding regular drills, ongoing training on a regular basis with inclusion of all key people in the hospital.

Recommendations

1. Annual safety and security audits to be done by Quality team.
2. A thorough risk assessment should be done, as organization hasn't delineated any risk assessment. It helps the organization to find out to which disaster they are more prone to.
3. Senior management should allocate a separate budget for disaster preparedness so that training and drills could be carried out smoothly and regularly.
4. Involvement of the local community, training the volunteers from the patient's attendants, so that the trust towards the organization increases and they also feel secure about the organization.
5. Identify Disaster Coordinators/Quality Coordinators in every department and make them responsible for carrying out monthly training for disaster preparedness.
6. Quarterly surprise quizzes to be organized for disaster preparedness and small gifts could be awarded to motivate the participation of the Hospital staff.
7. Job cards to be made for different jobs and kept safely and to be activated at the time of disaster.
8. Copies of Disaster Management Manual should be available with all HOD's who should guide their staff periodically.
9. Disaster plans should be readily available and disaster committee should ensure that all staff member know from where to acquire the disaster plans.
10. List of addresses and important contact numbers must be updated regularly and to be displayed at Disaster Control Room.
11. Drills should be done quarterly for code yellow and monthly for code red and code blue. Drills should also include mock communication procedures.
12. Various fire fighting measures like smoke detectors, wet risers, water tanks etc should not be compromised at any cost. Management gave excuse of construction work for non-functioning of fire fighting measures.
13. Evacuation plans should be exhibited on all floors, especially near the staircases.

Limitations of the Study

- Due to time constraint, the study phase was rather limited.
- Sample size of the study is small due to which a holistic view of the objectives could not be put forth.
- Due to construction activities on site during the period of study, the realistic picture could not be observed. The management gave this constructional aspect as an excuse of non-functionality of fire fighting measures, including emptiness of the fire water sumps.

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Appendix – I

Study Questionnaire (for pilot test)

Name: _____

Department: _____

Designation: _____

1. How long have you worked in the hospital?

    - Less than 1 year
    - 1-3 years
    - 3-5 years
    - More than 5 years

KNOWLEDGE

2. What is a disaster?

    _____

3. What is a disaster manual?

    _____

4. What are the types of disaster? Give some e.g. of types of disaster.

    _____

    _____

5. Do you know where to find disaster management manual in your organization? ***Yes/No***

6. How many codes are there in your organization?
    - 2
    - 3
    - 5
7. Match the following:

    - Code Blue – disaster
    - Code Red – cardiac arrest
    - Code Yellow -- fire

8. Tick the applicable portable fire extinguisher:

    - Soda Acid type
    - Oxygen type
    - Carbon dioxide type
    - Dry Chemical Powder type
9. Do u know where is nearest fire extinguisher placed? ***Yes/No/Don't know***
10. If yes, where are they located?
11. Do you have fire exits in the organization? ***Yes/No/Don't know***
12. Do you know the nearest fire exit from where we are now? ***Yes/No/Don't know***
13. If yes, where are they located in the building?

    _____

14. Do you know what Incident Command Nucleus is? ***Yes/No***
15. If yes, who heads the Incident Command Structure?

    _____

16. Do you know what Disaster Control Room is? ***Yes/No***
17. If yes, which area to act as Disaster Control Room?

    _____

18. Do you know what Triaging is? ***Yes/No***
19. Do you practice color codes in triaging? ***Yes/No***
20. Match the following:

- Red - Brought dead case
- Black - minimally injured, walk around cases
- Yellow - life threatening cases, need emergency care without any delay
- Green - severely injured but non-life threatening cases

21. Do you know what mock drills are? ***Yes/No***
22. Do you know what to do during a drill? ***Yes/No***
23. Can you give information to the media during disaster? ***Yes/No/Don't know***
24. If media approaches you with question, what would you do?

    _____

ATTITUDE

25. I do not need to know about disaster plans. ***Agree/Disagree***
26. Disaster can be handled effectively without any prior preparation. ***Agree/Disagree***
27. Disaster planning and management is for nurses and doctors only. ***Agree/Disagree***
28. Potential hazards likely to cause disaster should be identified and dealt with. ***Agree/Disagree***
29. Training for managing disaster is necessary for each and every staff of the hospital. ***Agree/Disagree***

30. It is necessary to have a written disaster manual in the organization. ***Agree/Disagree***
31. Disaster manual need to be regularly updated. ***Agree/Disagree***
32. Disaster is unlikely to happen in our hospital. ***Agree/Disagree***
33. Disaster mock drills must occur frequently in the hospital. ***Agree/Disagree***

PRACTICE

34. Did you get training for managing disaster at the time of joining? ***Yes/No***
35. If yes, what type of training you underwent?

    _____

    _____

36. Are disaster mock drills done at your hospital? ***Yes/No/Don't know***
37. If yes, what type of drills is done?

    _____

    _____

38. Is there ongoing training for disaster preparedness? ***Yes/No/Don't know***
39. If yes, how often?
40. Is the disaster plan periodically updated? ***Yes/No/Don't know***
41. If yes, how often?
42. How you manage workload during disaster?

    _____

    _____

Appendix – II

Study Questionnaire (rectified after pilot test)

Name: _____

Department: _____

Designation: _____

1. How long have you worked in the hospital?

    - Less than 1 year
    - 1-3 years
    - 3-5 years
    - More than 5 years

KNOWLEDGE

2. What is a disaster?

    _____

3. What is a disaster manual?

    _____

4. What are the types of disaster? Give some e.g. of types of disaster.

    _____

    _____

5. Do you know where to find disaster management manual in your organization? ***Yes/No***
6. How many codes are there in your organization?
    - 2
    - 3
    - 5
7. Match the following:

    - Code Blue – disaster
    - Code Red – cardiac arrest
    - Code Yellow -- fire

8. Tick the applicable portable fire extinguisher:

    - Soda Acid type
    - Oxygen type
    - Carbon dioxide type
    - Dry Chemical Powder type

9. Do u know where is nearest fire extinguisher placed? ***Yes/No/Don't know***
10. If yes, where are they located?
11. Do you know how to operate fire extinguisher? ***Yes/No***
12. Do you have fire exits in the organization? ***Yes/No/Don't know***
13. Do you know the nearest fire exit from where we are now? ***Yes/No/Don't know***
14. If yes, where are they located in the building?

    _____

15. Do you know what Incident Command Nucleus is? ***Yes/No***
16. If yes, who heads the Incident Command Structure?

    _____

17. Do you know what Disaster Control Room is? ***Yes/No***
18. If yes, which area to act as Disaster Control Room?

    _____

19. Do you know what Triaging is? ***Yes/No***
20. Does your Organization practice color codes in triaging? ***Yes/No/ don't know***
21. Match the following color codes for triage:

- Red - Brought dead case
- Black - minimally injured, walk around cases
- Yellow - life threatening cases, need emergency care without any delay
- Green - severely injured but non-life threatening cases

22. Do you know what mock drills are? ***Yes/No***
23. Do you know what to do during a drill? ***Yes/No***
24. Can you give information to the media during disaster? ***Yes/No/Don't know***
25. If media approaches you with question, what would you do?

    _____

ATTITUDE

26. I do not need to know about disaster plans. ***Agree/Disagree***
27. Disaster can be handled effectively without any prior preparation. ***Agree/Disagree***
28. Disaster planning and management is for nurses and doctors only. ***Agree/Disagree***
29. Training for managing disaster is necessary for each and every staff of the hospital. ***Agree/Disagree***

30. It is necessary to have a written disaster manual in the organization. ***Agree/Disagree***
31. Disaster manual need to be regularly updated. ***Agree/Disagree***
32. Disaster is unlikely to happen in our hospital. ***Agree/Disagree***
33. Disaster mock drills must occur frequently in the hospital. ***Agree/Disagree***

PRACTICE

34. Did you get training for managing disaster at the time of joining? ***Yes/No***
35. If yes, what type of training you underwent?

    _____

    _____

36. Are disaster mock drills done at your hospital? ***Yes/No/Don't know***
37. If yes, what type of drills is done?

    _____

    _____

38. Is there ongoing training for disaster preparedness? ***Yes/No/Don't know***
39. If yes, how often?
40. Is the disaster plan periodically updated? ***Yes/No/Don't know***
41. If yes, how often?
42. How you manage workload during disaster?

    _____

    _____