AN INVESTIGATION INTO THE STATE OF PREPAREDNESS AND RESPONSE CAPACITIES OF THE ZAKA COMMUNITIES TO CHOLERA OUTBREAKS

BY

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Declaration

I Percy Victor Chigogora do hereby declare that this dissertation is the result of my investigations and research, except to the extent indicated in the acknowledgements, references and by documents in the body of the report and that it has not been submitted in part or in full for any degree or qualification of higher learning in any other university or other institute of higher learning.

Signature…… Date……..

Supervisor …… Date…….

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Dedication

I dedicate this piece of work to my wife Tsitsi and my three lovely children. I could not have pulled off this colossal task without the unwavering support of my family.

Abstract

A qualitative study to determine the capacity of rural communities in emergency preparedness and response for cholera emergencies was carried out in three wards of Zaka rural district. The vulnerability of communities to health disasters warranted the need to explore the cholera preparedness of the Zaka communities. A descriptive survey was used in the study .Household interviews were conducted on forty (46) respondents, four (4) Key informants from the two (2) rural health centres were also interviewed and two (2) Focus groups discussions were conducted with the Health Centre Committees of wards 14, 16 and 21. Purposive sampling was done to select wards and Key informants and random sampling was used to select households that participated in the study. Descriptive statistics based on themes, numbers and codes were used to summarize and describe the research results obtained from the questions completed by the health staff and interviews conducted with villagers in the 3 wards. The research findings showed that the Zaka community lacked capacity in emergency preparedness and response; there were no emergency preparedness and response plans for the wards, there were no committees responsible for planning for emergencies, all staff members and communities were not trained in emergency preparedness and response. There was no involvement of community in analysing disease statistics for their area, mitigation measures implemented were from top down planning process, no community initiatives were in place. There were no resources set aside by the community and households for emergencies. Hygiene practices of the community in terms of faecal disposal and hand washing had deteriorated, 41.3 % were practicing open defecation, 100% did not have hand washing facilities and 90 % used run to waste method without soap for hand washing, and these practices put the community at risk of transmission of diarrhoeal diseases.

The researcher recommended training of health workers first then community structures on emergency preparedness and response using staggered lessons as a way of circumventing unavailability of funds and the inclusion of emergency preparedness and response planning on the roles of the Health Centre Committees since they were visibly functioning on health development matters at the clinics Some of the recommendations proffered are as follows:. adoption of simple, affordable methods of excreta disposal like the upgradeable Blair toilet in order to reduce open defecation , installation of tippy taps with locally available materials, intensification of health promotion through Village Health Workers and Health clubs.

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Acronyms

AIDS	Acquired Immune deficiency virus
CDC	Centre for Disease Control
DCP	Department of Civil Protection
DRR	Disaster Risk Reduction
EPR	Emergency Preparedness and Response
GTI	Gastrointestinal Infection
GOZ	Government of Zimbabwe
HIV	Human-immuno-deficiency
HFA	Hyogo Framework of Action
IWSD	Institute of Water and Sanitation Development
IDSR	Integrated Disease Surveillance and Response
MDG	Millennium Development Goals
MOH&CW	Ministry of Health and Child Welfare
NCPCC	National Civil Protection Coordination Committee
NGO	Non-Governmental Organization
OCHA	Office Of the Coordinator of Humanitarian Affairs
OD	Open Defecation

RBF	Results Based Financing
RRT	Rapid Response
RDC	Rural District Council
SARS	Severe Acute Respiratory Syndrome
SADC	Southern Africa Development Community
UNICEF	United Nation Children Education Fund
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

CHAPTER ONE: THE PROBLEM AND ITS CONTEXT

1.0 Introduction

This chapter laid the foundation for the entire research by introducing the background of the study, statement of the problem, research questions, significance of the study, assumptions, limitations, delimitations , definitions of key terms and the summary.

1.1Background of the study

The study was conducted in Zaka district, Masvingo province. The district has been devilled by a mirage of disasters, chief among them cholera outbreak. In 2008-2009 Zaka district was hit by a cholera outbreak with 6833 cases being reported. 6530 fell sick and 285 deaths occurred in the community (MOH, 2009). The community was thrown into panic, fear and commotion as the capacity of the villagers and the health personnel to copy with the outbreak was stretched. According to Guhar-Sapir *et al.(* 2012) cholera outbreak continues to be a major public health problem in many developing countries and it has remained one of the causes of morbidity and mortality in many regions of the world. According to the Office Of the Coordinator of Humanitarian Affairs (OCHA, 2012) the epidemic has been reported in many areas of the world and these include India, South and Central America. The out-breaks are associated with limited safe water supply, poor hand hygiene practices, poor health systems, poor sanitation and social-cultural behaviours of community members, low latrine coverage and poor practices of disposal of human faeces . Africa is referred to as a home land for frequent cholera out breaks. Cholera is endemic in sub-Saharan Africa where poor sanitation and lack of clean water facilitate the spread of the disease. Cholera is feared because of its ability to cause sudden and intense diarrhoea, vomiting, dehydration causing a victim to go from seemingly healthy condition to death in twenty four hours . Cholera outbreaks have become an inherent part of biophysical environment in Africa (Guhar-Sapir *et al.,* 2012).

Pawaringira*et al., (*2011) noted that during the 2008-2009 Cholera outbreak, the declaration of the outbreak was done very late, by Government, leading to late response by partners while the disease was spreading like a veldt fire. The overall impact of Zimbabwe‘s decade-long economic decline and cuts in public health expenditure adversely affected the health delivery system. This resulted in the deterioration of the health care facility infrastructure at all levels, resulting in reduced access to basic health care (WHO, 2007).

In addition, crucial activities such as outreach services, referral of patients, drug distribution, surveillance, and quality supervision of local health centres were hindered by shortage of transport, poor road network and lack of communication. Moreover, the unprecedented rampant brain drain further compounded the decline in critical public health programmes and quality and coverage of services such as emergency preparedness and response. The economic meltdown also resulted in the decline of water and sanitation coverage in both urban and rural areas. Epidemiological reports by the MoHCC as well as outbreak response reports by WHO and partners indicate that Zimbabwe continues to be vulnerable to outbreaks of epidemic-prone diarrheal diseases such as cholera, typhoid fever, rotavirus and dysentery.

Civil Protection Committee (CPC) has not empowered the communities in terms of training and resources, to enable them to respond to disasters. According to Twigs (2004) Zimbabwe faces a challenge in the area of early warning. This is the process of monitoring the situation in communities or areas known to be vulnerable to slow onset hazards, and passing the knowledge of the impending hazard to people in harm's way. Twigs (2004) further alludes to the fact that to be effective, warnings must be related to mass education and training of the population to be aware of what actions they must take when warned. Most organisations and communities do not have sufficient response capacity to respond to the cholera outbreak. This is defined in terms of human, material and financial resources (WHO, 2007). The Zimbabwe Government committed itself to the Hyogo framework priorities and the SADC Disaster Risk Management strategy for 2012-2015 which prioritizes contingency planning (OCHA and GOZ 2012). In Zimbabwe, political will is amply demonstrated by the existence of the legal enabling statute, which helped to create an enabling environment in which a dedicated disaster management department was promulgated. The institutional framework, appropriate policy development and legislative codes all flow from the corporate commitment.

Zimbabwe has a draft bill for amending the Civil Protection Act (1989); draft policy framework for mainstreaming disaster risk reduction in development planning was also developed. The drafts are in conformity with International standards, Hyogo Framework of Action (HFA). Zimbabwe appended its signature to the Hyogo disaster management frame work **(**Twig, 2004)**.** As provided by the Zimbabwe Civil Protection Act of 1989, central government initiates hazard reduction measures through relevant sector Ministries.

Local administration takes the responsibility for implementing hazard reduction activities (OCHA and GOZ , 2012). Ministry of Health and Child Care (MOHCC) adopted and adapted WHO-Integrated Disease Surveillance and Response (IDSR) principles. According to (OCHA, 2012) Cholera comes with a huge cost as several billions of dollars have been poured towards the fight against cholera. Thousands of people have succumbed to Cholera throughout the World. According to the Office of the Coordinator of Humanitarian Affairs (2012) billions of dollars are spent worldwide to recover from disasters and many lives are lost due to these disasters. OCHA (2012) pointed out that disasters negatively impact development gains and further states that programming that does not mainstream disaster risk reduction can increase vulnerability of communities to disasters.

Africa is under the threat of cholera and needs a complete paradigm shift if this persistent occurrence is to be stopped and the shift is only feasible provided the leadership in the continent shows good political will to help transform African countries through improved health (Guhar-Sapir *et al.,* 2012). Despite the fact that Zimbabwe is a signatory to Hyogo framework of action, SADC disaster management strategy coupled with the Civil Protection Committee which runs from the national level to the district level and a myriad of policies and a lot of training programmes that have gobbled thousands of dollars, Zimbabwe remains susceptible to cholera outbreaks. The cholera predisposing factors such as unhygienic practices, poor water and sanitation are still prevalent .Therefore the study sought to investigate preparedness and response capacities of Zaka rural communities to cholera outbreaks. Below is a brief description of the Zaka Rural District.

1.2 Zaka Rural District

Zaka District is situated in the South-Eastern part of Zimbabwe, 86 kilometres from the Provincial city, Masvingo. Zaka shares boundaries with Bikita, Masvingo and Chiredzi district. Zaka is found in agro ecological region five (5) in the Lowveld of Zimbabwe that records rainfall of between 600 – 800mm per annum (Mapara 2010). Rivers such as Chiredzi, Shange, Murerezi and Chivaka drain the area, thereby providing source of irrigation water to the Zaka community. It is semi-arid and interrupted by hills such as Bvuma, Chikona, Banya, Biri and Goto. Famous for harurwa (encosterndelegorguel) and wild fruits like mazhanje (uapacakirklania) is the sacred Bvuma Mountain whose vegetation has been conserved.

The soils are generally poor formed from a hilly terrain. Subsistence farming is the main form of living (Mapara 2010). Farming is largely based on cattle and growing of resistant crops including sorghum, millet, groundnuts as well as maize.

Irrigated farming provides the people with vegetables and green maize. Sale of wild fruits like mazhanje and insects such as harurwa provide extra income as well as vitamin c and proteins respectively, to many families. These are sold at Growth points like Jerera and Nyika (Cox 1992). The district has 34 wards; the population is serviced by 21 rural health facilities, 1 mission hospital and 1 district hospital. There are 120 Village Health Workers. In 2008-2009 Zaka district was hit by a cholera outbreak with 6833 cases being reported, 285 deaths occurred in the community (MOH, 2009), In 2010 Zaka District also faced a measles outbreak with 224 cases and 52 deaths reported all the deaths occurred in the community.

1.3 Statement of the problem

Zimbabwe is a signatory of the Hyogo disaster preparedness framework and the Millennium development goals. The country boost of a legal frame work which gave birth to the National, Provincial and District disaster management structures. A national civil protection unit fund was also promulgated. Non-governmental organizations are supporting government efforts through funding and facilitating disaster management trainings. Despite the structures that have been put in place , several trainings that have gobbled thousands of dollars there is inadequate preparedness in terms of planning , response , training personnel and coordination at institution and community level. There is a disjuncture between policy and what is obtaining on the ground. This necessitated an investigation into the preparedness and response to cholera in Zaka District.

1.4 Research Questions

The following are the research questions for the study

- What is disaster preparedness and response?
- How are stakeholders (government, NGOs and community) involved in the management of cholera outbreak?
- What is the behaviour and practice of the community regarding health and hygiene?
- How can the stakeholders improve community capacity to preparedness and response to emergencies?

1.5 Significance of the study

According to Kahn (2002) the significance of the study refers to the importance of the study or why the study is being carried out. The study was of great benefit to the researcher, Ministry of Health and Child Care, Local Government and Public Works, Zaka District Council, Civil Protection Committee and the community. Kahn (2002) alludes to the fact that it is very important for the researcher to highlight the significance of his study. Kahn (2002) further asserts that the significance of the research study should be clearly justified by the researcher so that the study may not be useless or bring no benefits to others. The significance of the study, often called the "rationale," attempts to explain to the audience why a researcher's work is worth performing. Hence this study is of crucial benefit in the following areas:

1.5.1 The researcher

The study enabled the researcher to attain a Master's degree in Adult education. The research skills of the researcher were sharpened. The researcher through the study contributed to the body of knowledge in the area of health related emergencies. The knowledge is being used by people who work in the area of disaster preparedness.

1.5.2 Ministry of Health and Child Care

The researcher envisages that the study is going to assist Ministry of Health to come up with policies which protect workers and the community at large from cholera outbreaks and the strengthening of disease early identification systems. More information was added to the body of knowledge in the area of health related emergencies.

1.5.3 Ministry of Local Government

The study assisted the Ministry of Local Government to come up with new and relevant information which would enhance the disaster preparedness structures or come up with new structures. Research findings are being used to identify possible areas for forging strategic partnerships with the private, government, local authorities, civil society and affected communities.

1.5.4 Zaka Rural District Council (ZRDC)

The rural areas are under the jurisdiction of the Rural District Councils. The Rural District Councils (RDC) also own a significant number of health facilities as such the knowledge which was obtained through the study aided ZRDC in understanding the cholera phenomena and to formulate a functional disaster management strategy

1.5.5 Civil Protection Unit (CPU)

The research findings helped to improve institutional disaster preparedness and response. The findings helped the district to review and formulate disaster preparedness and response plans and the disaster risk reduction policy.

1.5.6 Community

The research findings enabled the strengthening of the Zaka emergency structures and the development of emergency plans.

1.6 Assumptions

Key informants and health workers had an understanding of emergency preparedness and response. The researcher got information from any staff member from the health centres. The people in the Zaka communities have acceptable Knowledge, attitudes and risk perceptions about cholera (infection, spread, diagnosis, treatment and management). This is premised on the fact that the 2008 to 2009 cholera outbreak had a lasting impact on the people. The underlying assumption was that cholera, as a simple and treatable disease, should have been effectively managed and stopped. People's lives could have been saved during the outbreak that began in 2008. It was therefore assumed that the coping strategies of the community and stakeholders were weak, hence the high infection and death rates.

It was also assumed that the communities would furnish the researcher with most of the required first-hand information since they were the ones on the ground during the last cholera outbreak.

1.7 Limitations

Limitations of the study are those characteristics of design or methodology that impacted or influenced the interpretation of the findings from the research.

They are constraints on generalizability, applications to practice, and or utility of findings that are the result of the ways in which the researcher initially chose to design the study and or the method used to establish internal and external validity (Price etal 2004). The researcher envisaged the following limitations.

1.7.1 Methodology

The researcher used a case study design which was descriptive. The case study only pertains to 3 wards of Zaka district (wards 14, 16 and 21). The findings cannot be generalized to other areas. The findings are limited to Zaka district.

1.7.2 Time and financial resources

As a worker, father, part time student the researcher faced time constraints. The Researcher was not able to track down risk reduction activities being conducted but had to rely on the information provided by key informants. The researcher worked on a small manageable sample size and only focused on three wards. The researcher faced financial constraints in printing instruments, consent forms and travelling costs to collect data.

1.7.3 Competing activities

The researcher is a full time employee in a very demanding health programme, which left him with very little time for other activities. The researcher struggled with time to meet the demands of the study.

1.7.4 Site of research

The research study focused on 3 wards and 46 respondents. The research findings were generalised. This may not be a true representation of the cholera disaster preparedness and response of the Zaka communities.

1.7.5 Research instrument

The study instrument was developed and used for the first time by the researcher who is an adult learner in research. The instrument may not have yielded detailed and accurate information despite being pre-tested for validity and reliability.

1.7.6 Sampling method

The researcher used convenience sampling method to select participants as they came till the desired sample size was reached. This sampling method has an element of bias.

1.7.7. **A polarised society**

The Zaka community is highly polarised. The researcher made use of the community leaders to dispel wrong notions and reassure the communities that the research had nothing to do with politics. This strategy helped to dispel suspicions and enabled the community members to participate willingly and freely in the study.

1.7.8 Researcher's research skills

The researcher is still in experienced in research. He had to rely on the guidance of the Project supervisor and the Crown Agents Monitoring and Evaluation Specialist for technical guidance and direction.

1.8 Delimitation of the Study

According to Kahn (2002) delimitations include the population of a study, place, time, variables, statistical analysis and focus of the research. Setting these delimitations and subsequent justifications helped the researcher to maintain objectivity in the study. It will also help other researchers reconstruct the study or advance future research on the same topic. The study was carried out in Zaka District, Masvingo Province. Two health centres namely Zibowa and Chiredzana and 3 wards (14, 16 and 21). The wards have a cumulative population of 2150 people. 46 household respondents, 4 key informants from 2 rural health centres and 2 health centre committees were interviewed. The interviews focused on preparedness and response to cholera emergencies only. The study did not cover the whole district because the population is huge hence was not manageable. Sampling helped to address the challenge of time factor coupled with financial constraints. Data collection was conducted in the 2nd week of September 2017. The researcher and 2 assistants collected the data.

1.9 Definition of key terms

In this study, the following terms were defined as they were used:

Public Health Emergency: Occurrence or imminent threat of an illness or health condition caused by bio-terrorism, epidemic or pandemic disease or novel and highly fatal infectious agent or biological toxin that poses a substantial risk of significant number of human facilities or incidents or permanent or long term disability.(MOH &WHO, 2011). In this study Public health emergency referred to a health epidemic.

Preparedness: refers to activities and measures taken in anticipation of an emergency, to forecast and warn against hazards, evacuate people and property when they are threatened and ensure effective response. (WHO, 2002). In this study preparedness referred to activities under taken to ensure that vulnerability risks are reduced or contained.

Disaster Response: According to (WHO, 2002) is the provision of assistance or intervention during or immediately after a disaster to meet the life preservation and basic subsistence needs of those people affected. It can be of an immediate, short-term or protracted duration. In this study disaster Response Preparedness refers to activities undertaken to minimize loss of life, injury and property damage caused by a disaster; and to ensure that rescue, relief, rehabilitation and other services can be provided following a disaster.

Cholera: Cholera is a bacterium called Vibrio Cholerae that contaminates food and water causing acute diarrhoeal infection; it however does not usually get transmitted from person to person. Its incubation period is very short ranging from two hours to five days. A bacterium in the intestines releases toxins causing heavy but painless watery diarrhoea and vomiting, which requires instant treatment in case of severe diarrhoea or even possible death. (WHO, 2015a). The researcher adopted this definition as what the term cholera meant in this study.

Community : Dreyer, Hattingh and Lock (2001) noted that communities can be defined from a geographical or social perspective. In the social sciences and particularly in the study of vulnerabilities in disaster management, communities are defined in terms of households, villages or neighbourhoods based on shared experiences.

Such experiences include ethnicity and ethnic groups; special interest groups, common and shared language and social practices. In this study the term community referred to villagers living in Zaka district.

Capacity: It is a measure or expression of the degree to which a community can intervene and manage a hazard in order to reduce its potential impact (UNISDR, 2009). In this study the term capacity refers to the ability of a community to prevent, mitigate and cope with the effects of the disaster mainly from the perspective of how the community makes use of resources.

Disaster: any occurrence that cause damage, ecological disruption, loss to human life or disorientation of health and health service on the scale sufficient to warrant an extraordinary response from outside the affected area (WHO, 2000). This is what the term disaster meant in this study.

Resilience: ability of system, community exposed to hazards to resist, absorb, accommodate and recover from the effects of the hazard in a timely and efficient manner, including through preservation and restoration of its essential basic structures and functions. (WHO, 2002).

In this study the term resilience referred to the pliability of a community to withstand a disaster and when the disaster is not contained, the community would be able to recover.

1.10 Summary

The chapter discussed the background to the study, statement of the problem, purpose of the study, research questions, and significance of the study, assumptions, and limitations, delimitations of the study and definition of terms. The next chapter dealt with review of related literature.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.0 Introduction

The researcher looked at some of the existing literature covering broader and specific issues pertaining to disaster preparedness and response. The literature review was conducted under the following subheadings: what are disasters, emergency preparedness, emergency response, World Health Organization emergency preparedness and response, global trends covering UK, South Africa among other countries before focusing on the Zimbabwean issue. In addition the researcher also reviewed articles on Cholera to enable him to get a full understanding of the predisposing factors and mitigating strategies.

2.1 Literature review and its implications to this study.

According to Bhebhe (2015) Literature review is a critical and evaluative account of what has been published on a chosen research topic. It is concerned with gathering and summarising, synthesizing and analysis of the arguments of others. Literature review helps to put the research problem into perspective as well as identifying gaps and weaknesses in previous researches so as to justify a new investigation. Bhebhe (2015) further allude to the fact that through literature review the researcher should describe and analyse the knowledge that exists and what gaps occur in research related to his own field of interest. The review of literature is essential in discerning what is already known about the topic under study. According to Burns and Grove (2007), reviewing relevant literature about the phenomena under study is done to generate a picture of what is known and not known about a particular situation. Researchers do not conduct their studies in a vacuum but need literature to be reviewed widely in order to have a broader overview about the study and to gain knowledge or a full picture of what ought to be. Findings of previous studies provided a platform for analysing new findings which the researcher either confirmed or rejected and it also contributed to the general scholarship of the investigator.

2.2 Conceptual framework

The Manitoba integrated disaster management model for the health sector was applied in this study to assess the preparedness and response of the Zaka community to cholera outbreaks.

The Integrated disaster Management model has four inter-related components which are identified as: hazard assessment (identifying the threats and vulnerabilities), risk management (determining the implications and treatment options), mitigation (eliminating or reducing threats as possible and appropriate) and preparedness (development and readying response and recovery actions).

These above components are implemented as part of a strategic approach and each is linked to a quality improvement process that monitors and evaluates changes to the system, community and environment. The model encourages a natural systems approach where roles and responsibilities in a disaster reflect those undertaken in normal times, this way it prevents creation of an independent "disaster- only" system. The integrated disaster management model recognizes that, disaster management planning is linked to day to day planning so this becomes a culture in an organization. It also implements the all-hazards approach that looks at all hazards and their impacts. The model aims to develop communities that are resilient to disasters, less vulnerable to disasters, create safer communities that suffer fewer deaths, physical injuries and psychological trauma due to disasters. The integrated disaster management process begins with strategic planning that would identify the functions and assign responsibilities for the components. Figure 3.1 below explains the process.

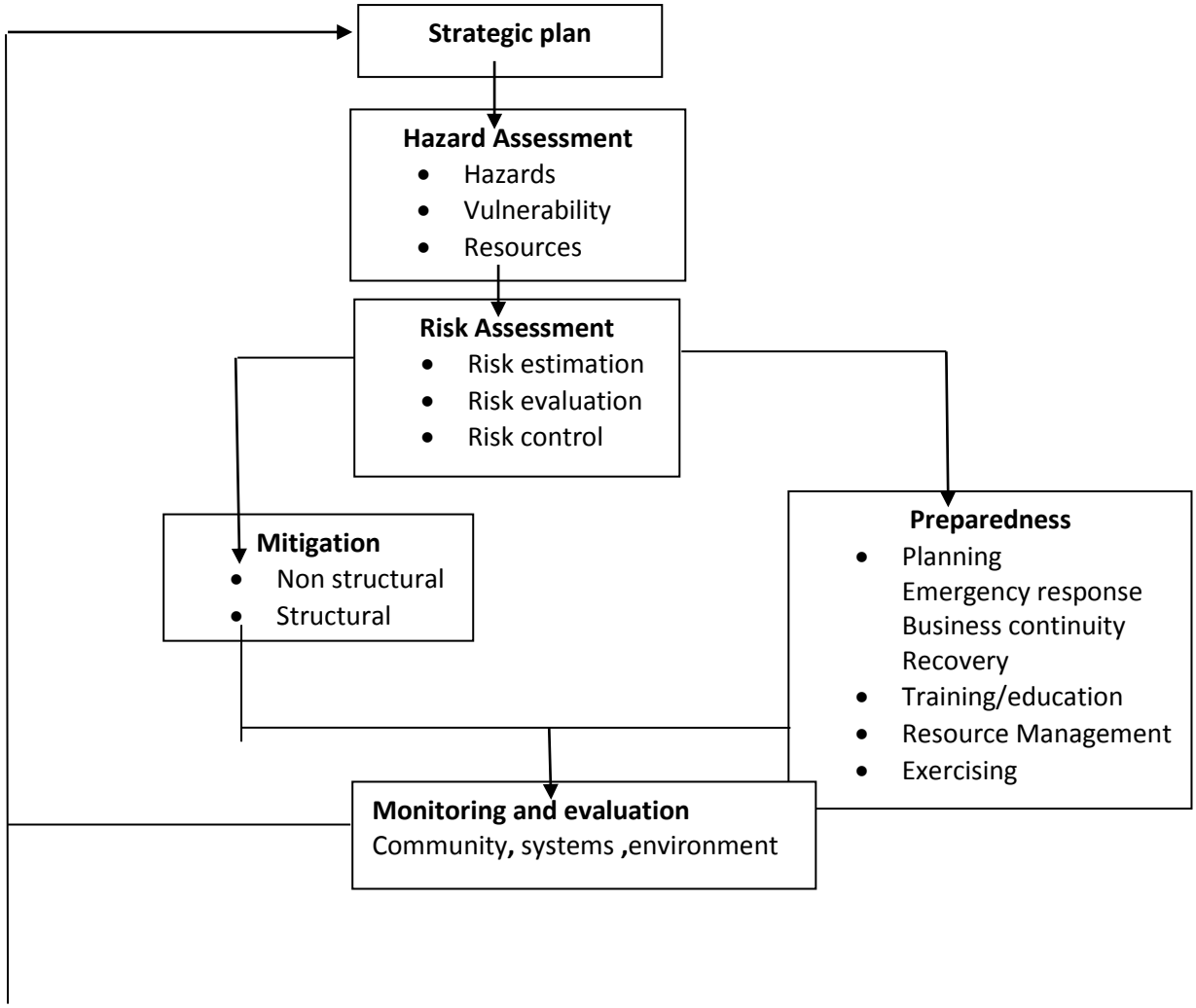


Figure 2.0: Integrated Disaster Management model (Source: *Manitoba Health 2002)*

Conducting a hazard assessment is the first step, this assessment provides information that is necessary for risk management, mitigation and preparedness actions are taken to address the risks. Actions and outcomes are evaluated through a quality improvement process that would lead ton reviewing of the strategic plan to suite what is applicable on the ground. The

integrated disaster management model was applied in the study in order to evaluate the preparedness and response capacities of the rural communities to public health emergencies with special reference to cholera.

2.3 What are disasters

The World Health Organization (2000) defined disaster as any occurrence that cause damage, ecological disruption, loss to human life, disorientation of health and health services on the scale sufficient to warrant an extraordinary respond from outside the affected community area. Toole and Waldman(2002) describes disaster as a relatively acute situation which are man-made, geophysical, weather related, or biological events that adversely impact on the health and economic well-being of a community to an extent that exceed the local coping capacity. World Health organization (2000) further described emergency as sudden occurrence demanding immediate action that may be due to epidemics, natural or technological catastrophes and strife or to other man-made causes. Nelson *et al.,* (2008*)* defined public health emergencies as health emergencies, particularly those whose scale, timing, or unpredictability threatens to overwhelm routine capacities. WHO (2000) highlighted that emergencies are defined within the context of social, political and epidemiological circumstance in which they occurred, which means some communities what they term an emergency other communities would not see it as an emergency. WHO went further to describe the characteristic features of an emergency as where there is a risk of introduction and spread of diseases in populations, when a large number of cases are expected to occur, when the disease involved is severe to cause disability and death, when the national authorities are unable to cope with situation due to lack of resources (technical expertise, drugs, equipment) that they would need external support, when there is a threat of international spread of the disease.

Guha-sapir*et al., (*2012*)* in the Annual disaster statistical review of 2011 classified natural disasters into five categories namely:

i. **Biological Epidemic,** these areviral, bacterial, parasitic, fungal, prion, infectious diseases, insect infestation and animal stampede,
ii. **Geographical disasters**-earth quakes, volcano, mass movement (dry) rock fall, landslides, avalanche, subsidence,
iii. **Hydrological disaster** which includes floods that are general, flush floods, storm surge, coastal floods and
iv. **Mass movements,** these include (wet) rock fall, landslide, avalanche and subsidence, metrological disasters-storm -tropical cyclones, local storm, the last group is the
v. **Climatological disasters** which may include extreme temperatures that presents as heat waves or cold waves, droughts, wild fires both forest and land fires.

2. 3.1 What is Emergencies Preparedness?

The World Health Organization (2001) defined emergency preparedness as a programme of long term development activities whose goals are to strengthen the overall capacity and capability of a country to manage effectively all types of emergencies and bring about an orderly transition from relief to recovery and back to sustained development.

Nelson *et al.,* (2008) defined Public Health Emergency preparedness as the capacity of the public health care systems, communities and individuals, to prevent, protect against, quickly respond and recover from health emergencies particularly those whose scale, timing or unpredictability threatens to over whelm routine capacities. The Homeland Security Services of America (2007) described preparedness as a range of deliberate, critical tasks and activities necessary to build, sustain and improve the operational capacity to prevent, protect against, respond to and recover from domestic incidents. Therefore emergencies preparedness is a community/country process of planning, putting measures and systems to prevent, reduce, protect against, quickly respond and recover from emergencies. United Nations member countries adopted the Hyogo framework for Action (HFA), a key instrument for implementing disaster risk reduction. The purpose of this framework is to build resilience of nations and communities to disasters, through a sustainable reduction of losses in terms of lives, social, economic and environmental assets of the community and countries (UN ISDR 2007). The HFA have five priority areas of action which governments should follow, the priority areas are listed down as:

i) **Make disaster risk reduction a priority**. Countries are required to ensure that disaster risk reduction is a national priority with a strong institutional basis for implementation. In this priority countries develop or modify policies, laws and organizational arrangements, plans, programmes and projects to integrate disaster risk reduction.

ii) **Know the risks and take action**. Identify risks and vulnerable areas, asses the possible impact, and monitor disaster risks and enhance early warning systems.

iii) **Build understanding and awareness.** Use of knowledge, innovation and education to build a culture of safety and resilience at all levels. Disasters will be reduced when communities have knowledge of vulnerabilities and what to do in times of disasters.

iv) **Reduce Risk.** Countries can build resilience to disasters by investing in simple, well-Known measures to reduce risks and vulnerability. Simple, affordable and effective mitigation measures should be adopted.

v) **Be prepared and ready to act.** Disaster preparedness should be strengthened at all levels(from village to national), being prepared includes conduction of risk assessments, development of plans and testing of these plans, establishment of an emergency fund which will be used for emergency response, recovery and also for preparedness, conducting simulation(drills) exercises to ensure that the communities are prepared.

2.4.2 Emergency response

Asghar*et al.*,(2006) proposed comprehensive model for disaster management in which emergency response include early warning system, evacuation, assistance for the victims, handling casualties, early medical supply, provision of essential services(water, sanitation), he also added recovery to the model in which damage assessment is done, debris removed, restoration, reconstruction and economic recovery achieved.

Monitoring and evaluation of the whole process is of vital importance, it determines how well the preparedness programme is being developed and implemented, and what needs to be done to improve (WHO, 2000). This is in agreement with Phaijn (2010) who said response is the provision of services and possible assistance during or immediately after a disaster in order to save lives, reduce the public health impact, ensure safety and meet the basic needs of the affected, this may include treatment, provision of sanitation, water, food and shelter. In response the community activates its emergency plan, everyone should be aware of their roles to avoid confusion which may cause delays in giving immediate assistance; disasters put people in a panic mode that's why it is necessary to be prepared. According to Waeckerle (1991) lack of information, experience and poor understanding of response plan can plague response assistance; he further stated that knowledge and experience would assist in making sound decisions about the response.

2.4.3 World Health Organization Emergency preparedness and response

WHO refers to World health Organization which is a United Nations organ mandated with addressing health issues across the globe.The World Health Organization (2001) described the process of preparing for an emergency as a series of related steps for preparing a

community, an organization or an activity for emergencies. The diagram below illustrates the process of emergency preparedness:

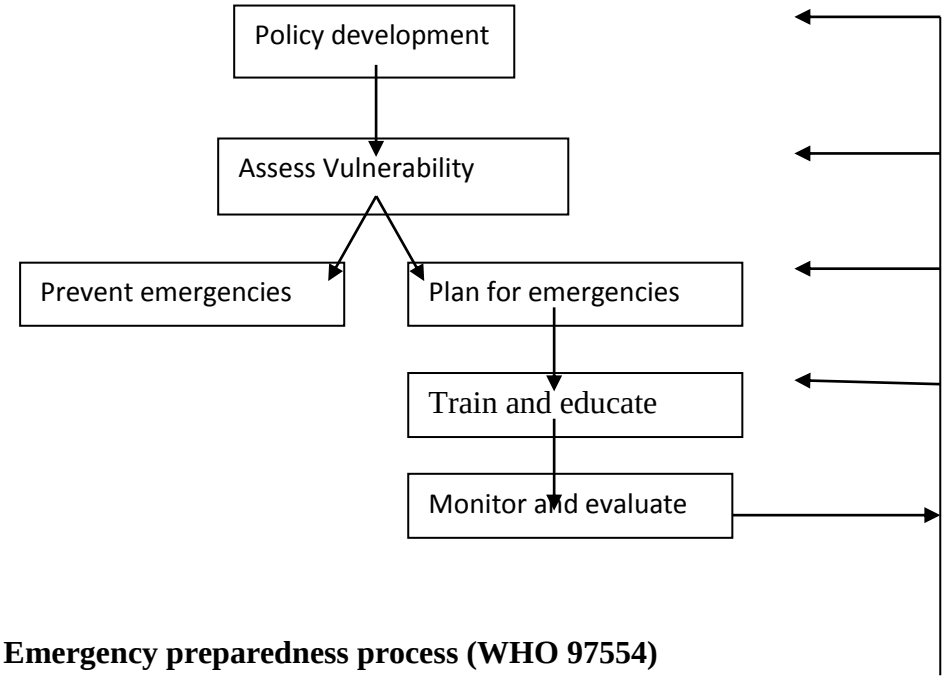


Figure 2.1 .An Emergency preparedness process (WHO 97554)

The WHO framework for emergency preparedness is in consistence with the Hyogo framework for action since it consist of legal and enabling policy for vulnerability reduction, collection, analysis and dissemination of information on vulnerability, there should put in place strategies, systems and resources for emergency response and recovery. Public awareness is of crucial importance in emergency preparedness (WHO 2001). The Manitoba integrated disaster management model have strategic planning as the first step of the process followed by hazard assessment, risk management, mitigation, preparedness and monitoring and evaluation as the crucial element of disaster management. The Researcher concurs with the Hyogo Framework of Action, World Health Organisation and the Manitoba management model in that there should be a legal frame work for disaster preparedness, this is a top-down planning, the legal framework give rise to National, Provincial and District structures that manages emergency preparedness and response, these should have clearly stipulated roles and responsibilities. Hazard assessments consist of vulnerability assessment which is also known as risk analysis or risk assessment (WHO, 2001). Risks are identified through records, statistics and assessing the way they affect the community (risk evaluation), community which are vulnerable to the identified risk are also mapped, the assessment should be an all hazard assessment (WHO , 2001). The next step is mitigating against the identified

risks, ways of reducing the hazards and their impact (mitigation) are also formulated. Practical ways of mitigating the hazard which are easy, simple and appropriate should be recommended.

Emergency preparedness includes putting in place strategies for response and recovery, assigning responsibilities, having structures for emergency preparedness and response putting resources aside for response and recovery, exercising (conducting drills/simulation exercises) in preparation for emergencies, simulations helps assess how communities are prepared for emergencies. Preparation includes training and educating people, personnel should be trained in disaster management and the community appraised of hazards and actions they should take in time of emergency (WHO, 2001).

2.4.4 The global trends

According to a study conducted by the United Nations, disasters have had devastating effects in the past two decades with 4.4 billion people affected by disasters and 1.3 million killed, economic losses amount to US$2trillion(Betera , 2011). Considering uncounted impact in low income households, informal businesses which are outside the official index loses could reach US$3 trillion, in 2011 a total of 332 national disasters were reported killing 30770 people and affecting 244, 7 million people. These disasters costed a record $3661.1 billion in damages; with Haiti earth quake costing 222 550 lives and Tohoku tsunami earth quake in Japan killing 19850 people. In 2011 Asia was the most affected (44%) America (28%) Africa (19.3%) Europe (5.4%) and Oceania (3.3%).

The UK flood events of 2007 alone caused damage to more than 55,000 properties, took the life of 13 people, left 350,000 people without water supply, affected 7,300 businesses and caused billions of spending by central government (Pitt , 2008). The risk of flood events is not new and has historically been characteristic for the UK. Today more than 5 million people live in risk areas in England and Wales, which creates additional concerns for central government to respond. The coastline regions are usually affected by sea surges, high tides, and gale force winds. Africa appear in the top 10 ranking on mortality due to disasters with Lesotho, Namibia and Angola having a mortality rate of 12, 4.7 and 0.7 per 100 000 inhabitants respectively (Guha-sapir*et al.,* 2012). The above statistics clearly show how costly disasters are and that Africa is also a victim to the effects of disaster due to lack of

preparedness as compared to other continents, and also lack of resources and expertise to respond to disasters.

According to UN(2002) disasters trap people in poverty, for example in Philippines, the 2009 strong storm typhoons Ondoy and Pepeng increased the incidence of poverty from 5.5% in 2006 to 9.5% in 2009, it dropped slightly to 7.6% six years later (Hillier 2013). This clearly shows how hard it is for poor countries to recover from disasters.

Public health emergencies have an effect on the development of a country, and development has effect on how public health emergencies affect individuals and countries. Economic loses are incurred due to epidemics, resources are taken to fight the epidemics, more funds are put into fight HIV/AIDS, families' incomes are eroded while taking care of the sick on medical expenses (Bloom *et al*, 2006). Gross domestic Product per-capita is lowered, more hours at work are lost due absenteeism due to illness so production is lowered, loss of skilled manpower may also affect production, education of children is also affected, with epidemics children stop from going to school, A country facing epidemics suffer from lack of Foreign direct investment since no one would like to invest where there is a risk, tourism is affected, no tourist will visit the country thereby causing decrease in foreign income, some country put bans and travel warnings to countries with epidemics (Bloom *et al*, 2006). Trade is lowered due to epidemics, trade will also be restricted. In turn development has an effect on health and occurrence of epidemics, lack of development predisposes a community to epidemics and development mitigate against diseases. According to Bloom *et al*, (2006) pathogens that cause epidemics arise and persist under conditions created by poverty. Close contact between individuals due to overcrowding favours transmission and eruption of epidemics.

In economies with high GDP per capita people are able provide themselves adequate accommodation. Undeveloped economies fail to provide communities with safe water and adequate proper sanitary facilities, this allows for transmission of diseases (Hillier 2013).

Vector, parasitic worms will strive in these conditions (Bloom *et al*. 2006). Lack of economic development of country would see failure by a Government to provide health facilities and health services, were there is development there is adequate advanced health infrastructure and services. Epidemics tend to occur where there is breakdown of health infrastructure or where the health system is weak.

A weak health system will fail to detect and respond to threats. (Bloom *et al*, 2006). Whereas developed countries like UK and Canada have adequate resources and infrastructure to fight and reduce the impact of epidemics.

According to Kapucu (2006)UK government takes serious steps to prevent elderly, young, and other vulnerable population casualties through public awareness and education.

Communities can provide themselves with safe water and proper sanitary facilities. The poor fails to provide themselves with medical cover and cannot pay for health services, in poverty there is persistent malnutrition which leaves people especially the older and young ones weak and vulnerable to diseases.

According to Bloom et al (2006) wealth enables individuals to provide themselves with proper accommodation, health cover, access to health specialists, can provide themselves with safe water and proper sanitation and better nutrition. Economic and political decline often triggers the spread of disease, there was diphtheria and resurgence tuberculosis and measles in Russia in the 1990s, economic and political stress have effect on the health delivery system (Bloom, 2006).

2.4.5 Cholera Epidemic in Haiti

According to a study conducted by Barau (2000) Cholera is transmitted by water or food that has been contaminated with infective faeces. The risk for transmission can be greatly reduced by disinfecting drinking water, separating human sewage from water supplies, and preventing food contamination. Industrialized countries have not experienced epidemic cholera since the late 1800s because of their water and sanitation systems. Although cholera persists in Africa and southern Asia, it recently disappeared from Latin America after sustained improvements in sanitation and water purification (Jenson, 2010). Only half of the Haitian population has access to health care because of poverty and a shortage of health care professionals (1 physician and 1.8 nurses per 10,000 population), and only one fourth of seriously ill persons are taken to a health facility (Cravioto, 2011).

Haitian government developed strategies for health reform and called on the international community for assistance. The Ministry of Health requested assistance from the Centres for Disease Control and Prevention (CDC) to strengthen reportable disease surveillance at 51 health facilities that were conducting monitoring and evaluation with support from the US President's Emergency Plan for AIDS Relief (PEPFAR) and at health clinics.

The Ministry of Health also asked CDC to help expand capacity at the Haiti National Laboratory to identify reportable pathogens, including *V. cholerae* and help train Haiti's future epidemiologic and laboratory workforce (Hendriksenetal, 2010). These actions, supported through new emergency US government (USG) funds to assist Haiti after the earthquake, laid the groundwork for the rapid detection of cholera when it appeared. On October 19, 2010, there was a sudden increase in patients with acute watery diarrhoea and dehydration in the Artibonite.

The outbreak was publicly announced on October 22 latrine (Cravioto, 2011). The response of the Haiti government was prompt, unlike in 2009 when Zimbabwe was hit by a cholera outbreak, the government took a couple of months before declaring cholera a national disaster. Hence International players could not mobilize resources in time to assist the country.

The Haiti Government investigation team visited 5 hospitals and interviewed 27 patients who resided in communities along the Artibonite River or who worked in nearby rice fields. Many patients said they drank untreated river water before they became ill, and few had defecated in a latrine. Health authorities quickly advised community members to boil or chlorinate their drinking water and to bury human waste (Jenson, 2010). In Zimbabwe the challenge of limited safe water and frequent water cuts forced people to resort to unsafe sources including shallow wells, ponds and dams among others. This still remains a challenge amid fears that if these structural problems are not addressed there will be another large scale epide-6-mic. In the revised Consolidated Appeal for 2009, partners in the water, sanitation and hygiene (WASH) cluster estimate that six million people in Zimbabwe have limited or no access to safe water (WASH Cluster, 2008/2009). Further to that, some rural areas have extremely low latrine coverage, resulting in unhygienic practices that lead to the contamination of water sources during the rainy season. A combination of these factors increases the risk of populations contracting cholera.

The rampant spread of cholera in Haiti prompted the Government with the assistance of USA to focus on 5 immediate priorities: (1) prevent deaths in health facilities by distributing treatment supplies and providing clinical training; (2) prevent deaths in communities by supplying oral rehydration solution (ORS) sachets to homes and urging ill persons to seek care quickly; (3) prevent disease spread by promoting point-of-use water treatment and safe

storage in the home, handwashing, and proper sewage disposal; (4) conduct field investigations to define risk factors and guide prevention strategies; and (5) establish a national cholera surveillance system to monitor spread of disease(UNICEF , 2011).

The Zimbabwe 2008-9 cholera epidemic occurred when government institutions were at their weakest point to respond effectively and health systems had almost collapsed. Consequently a number of multi-national, bilateral aid organisations, local and international NGOs responded to the epidemic.

Under the guidance of OCHA, the Water sanitation and Hygiene Cluster (WASH) together with Health cluster provided assistance to the government. Health officials needed daily reports (which established reportable disease surveillance systems were not able to provide) to monitor the epidemic spread and to position cholera prevention and treatment resources across the country.

In the first week of the outbreak, the Ministry of Health directorate collected daily reports by telephone from health facilities and reported results to the press. On November 1, formal national cholera surveillance began, and Ministry of Health began posting reports on its website. According to WHO (2010) CDC developed training materials (in French and Creole) on cholera treatment and on November 15–16 held a training-of-trainers workshop in Port-au-Prince for locally employed clinical training staff working at PEPFAR sites across all 10 districts. These materials were also posted on the CDC website. The training-of-trainers graduates subsequently led training sessions in their respective regions; 521 persons were trained by early December. Jenson (2010) avers that during the initial response ≈10,000 community health workers (CHWs), supported through the Haitian government and other organizations, staffed local first aid clinics, taught health education classes, and led prevention activities in their communities.

Training materials for CHWs developed by CDC were distributed at training sessions, shared with other nongovernmental organization (NGO) agencies, and used in a follow-up session for CHWs held on March 1–3, 2011. The CHW materials discussed treating drinking water by using several water disinfection products; how to triage persons coming to a primary clinic with diarrhoea and vomiting; making and using ORS; and disinfecting homes, clothing, and cadavers with chlorine bleach solutions. Materials were posted on the CDC website as well

(WHO, 2010). The Zimbabwe Government through the Ministry of Health and Child Care mobilized volunteers, Village Workers for the fight against cholera.

The MOHCC with the support of several NGOs trained cholera volunteers and village health workers and health professionals. IEC material was developed in English and vernacular. The leaflets and pamphlets were distributed in all provinces. Cholera awareness programmes were beamed and broadcasted on the television and the radio stations as a strategy to raise awareness.

Supply logistics were daunting as cholera spread rapidly across Haiti. Sudden, unexpected surges in cases could easily deplete local stocks of intravenous rehydration fluids and ORS sachets, and resupplying them could be slow.

The national supply chain, called Program on Essential Medicine and Supplies, was managed by Ministry of Health, with technical assistance from the Pan American Health Organization, and received shipments of donated materials and distributed them to clinics (Hendriksenetal, 2010). Early in November the USG provided essential cholera treatment supplies through the US Agency for International Development's Office of Foreign Disaster Assistance (OFDA) to the national warehouse. CDC staff also distributed limited supplies to places with acute needs. To complement efforts by Ministry of Health and aid organizations to establish preventive and treatment services, OFDA provided emergency funding to NGO partners with clinical capacity (Dowell, 2011). The NGOs efforts in Zimbabwe were coordinated by UNICEF. UNICEF coordinated the mobilization of resources from within and outside the country to aid the Government in the fight against cholera.

To increase access to treated water and raise awareness of ways to prevent cholera, a consortium of involved NGOs and agencies, called the water, sanitation, and hygiene cluster, met weekly. Led by Haiti's National Department of Drinking Water and Sanitation and the United Nations Children's Fund, the members of this cluster targeted all piped water supplies for chlorination, and began distributing water purifying tablets for use in homes throughout Haiti (Barau, 2000). CDC helped the National Department of Drinking Water and Sanitation monitor these early efforts with qualitative and quantitative assessments of knowledge, attitudes, and practices. According to UNICEF (2008) in Zimbabwe the relevant government ministries together with NGOs constituted District Water and Sanitation Subcommittee

(DWSCC) met on a daily basis for reporting and strategizing. Non-food items such as water storage buckets, soap and water purifying tablets were distributed throughout the affected communities. According to Dowell (2011) beginning October 22, The Haiti Ministry of Health broadcast mass media messages, displayed banners, and sent text messages encouraging the population to boil drinking water and seek care quickly if they became ill.

Early investigations affirmed the public's need for 5 basic messages:1) drink only treated water; 2) cook food thoroughly (especially seafood); 3) wash hands; 4) seek care immediately for diarrheal illness; 4) and give ORS to anyone with diarrhoea. In mid-November, focus group studies in Artibonite indicated that residents were confused about how cholera was spreading and how to best prevent it, but they understood the need to treat diarrheal illness with ORS, how to prepare ORS, and how to disinfect water with water purification tablets.

Posters provided graphic messages for those who could not read. On November 14, Haitian President René Préval led a 4-hour televised public conference to promote prevention, stressing home water treatment and handwashing, and comedian Tonton Bichat showed how to mix ORS. The Haiti highest political office was at the forefront of the fight against cholera, this was not the case in Zimbabwe. The Government of Zimbabwe's initial response to the outbreak was lethargic. Global experience with cholera suggests that the epidemic in Haiti could last for years. Although case counts decreased in early 2011, cases again increased with the onset of the rainy season, and conditions that permit waterborne transmission persist. Improving Haiti's water and sanitation infrastructure is critical to achieving the same profound health gains brought by improved water and sanitation infrastructure elsewhere (Dowell, 2011).

The World Health Organization estimates that meeting the global Millennium Development Goal for improving access to safe water and improved sanitation would have a huge return on investment worldwide (WHO, 2010). For each $1 invested, the economic rate of return in regained time at work and school, time saved at home by not hauling water, increased productivity, and reduced health costs would be as much as $8, in addition to the direct health benefits. For Haiti to meet this goal, an estimated 250,000 households would need access to an improved water source, and ≈1 million families would need access to improved sanitation. The Inter-American Development Bank estimated in 2008 that Haiti would require $750 million to achieve this goal. After the earthquake, the international community pledged >$6

billion to Haiti for relief. A long-term plan to build safe drinking water and sewerage systems are well within the range of the resources pledged (UNICEF, 2011).

2.5 Cholera in Nigeria

According to a study conducted in Nigeria by Qadri (2005) in Nigeria, the infection is endemic and outbreaks are not unusual. In the last quarter of 2009, it was speculated that more than 260 people died of cholera in four Northern states with over 96 people in Maidugari, Biu, Gwoza, Dikwa and Jere council areas of Bauchi state .

Most of the Northern states of Nigeria rely on hand dug wells and contaminated ponds as source of drinking water. Usually, the source of the contamination is other cholera patients when their untreated diarrhoea discharge is allowed to get into water supplies.

The 2010 outbreak of cholera and gastroenteritis and the attendant deaths in some regions in Nigeria brought to the forefront the vulnerability of poor communities and most especially children to the infection. The outbreak was attributed to rain which washed sewage into open wells and ponds, where people obtain water for drinking and household needs. The regions ravaged by the scourge include Jigawa, Bauchi, Gombe, Yobe, Borno, Adamawa, Taraba, FCT, Cross River, Kaduna, Osun and Rivers. Cholera exists as a seasonal disease, occurring mostly during rainy seasons. Pascual and colleagues highlighted the importance of rainfall as a driver of the seasonal cycle of cholera through its waterborne transmission, its dose-dependent nature of infection, and the decline of cases during the rainy season. Higher number of cases reported in Kano, Nigeria occurred during the rainy season (Tamang, 2005). In Calabar, South-southern part of the country, the incidence of cholera mostly occurred during the dry season followed by subsidence at the onset of rainy season. Consequently, seasonality of infection is not a critical issue in Nigeria as infections have been reported in both rainy and dry seasons (Gyoh, 2011).

For a cholera outbreak to occur, two conditions have to be met: there must be significant breaches in the water, sanitation, and hygiene infrastructure used by groups of people, permitting large-scale exposure to food or water contaminated with Vibrio cholera organisms; and cholera must be present in the population.

Cholera has been proven to be transmitted through faecal-oral route via contaminated food, carriers of the infection and inadequate sanitary conditions of the environment. The principal mode of transmission however remains ingestion of contaminated water or food (Farmer, 2006). Tamang (2005) alludes that in Nigeria, the 1996 cholera outbreak in Ibadan (Southwest) was attributed to contaminated potable water sources. Street vended water and not washing of hands with soap before eating food are possible reasons for the 1995-1996 cholera outbreaks in Kano state. Drinking water sold by water vendors was also connected with increased risk of contracting the disease. In Katsina, the outbreak of the disease was linked to faecal contamination of well water from sellers. The recent 2010 outbreak of cholera was speculated to be directly related with sanitation and water supply Tamang (2005).

The hand dug wells and contaminated ponds being relied on by most of the Northern states as source of drinking water was a major transmission route during the outbreak. Perhaps, these wells were shallow; uncovered and diarrhoea discharge from cholera patients could easily contaminate water supplies (Lopez etal 2011). In Nigeria, existing prevention and control strategies are multi-sectoral. Epidemic Preparedness and Response (EPR) approaches including registration of cases, case management and public health measures targeting personal hygiene and water treatment as well as emergency responses from both governmental and non-government agencies have contributed to the reduction in case fatality rates over the years and should be sustained.

2.6 Regional (SADC) Preparedness

The Southern African Development Community (SADC) is increasingly vulnerable to disasters triggered by a combination of natural and human-induced hazards. Common hazards include severe storms, drought, floods, cyclones, environmental degradation, earthquakes, conflict, political instability, poverty, and food and livelihood insecurity Benson &Twigg (2007).

Mainstreaming disaster risk reduction in development processes will contribute to building resilience in the sub region. Hazard trends are on the increase. The hazard trend between 1900 and 2013 was generally upward, with hydro meteorological hazards, such as drought,

cyclonic storms and floods, having the highest frequency. The increase in hydro meteorological hazards can mainly be attributed to the impact of climate change. Increased Hydro meteorological hazards have, in turn, increased the risk of biological hazards, particularly water-borne diseases, such as malaria, cholera and dysentery. At the same time, although the risk of environmental hazards was low, destruction of vegetation through, for example, wild fires, has increased the risk of drought and flooding (Maplecroft, 2010). Geophysical hazards, such as earthquakes and volcanic activity, have the lowest frequency. However, technological hazards, including industrial, traffic and miscellaneous accidents are now a major cause for concern, with South Africa having the highest frequency (SA, 2002). Increasing vulnerability to disasters, high levels of poverty, increased exposure to hazards, cross-border influx, weak social protection policies and relatively weak institutional capacity undermine disaster risk reduction measures in the SADC sub region (Twiggs&Steiner, 2002). The majority of SADC countries (9 out of 15) fall within the low human development index (HDI) category, with Lesotho, Zambia, Malawi, Zimbabwe, Mozambique and the Democratic Republic of the Congo falling below the sub-Saharan Africa HDI of 0.475 (Boko etal , 2007). These poverty levels are accompanied by increasing exposure to climate change-related hazards, the impact of HIV/AIDS, inadequate social protection policies to provide safety nets for the poor, increasing urbanization, and transboundary risks, which have exacerbated vulnerability to disasters (World Bank, 2013).

The policies that have been put in place by member countries are more explicit than the legislation on sector responsibilities, stakeholder and affected community participation, multi-hazard early warning systems, risk-sharing transfer mechanisms, transboundary risks, preparedness, response and recovery. While policies appear to be clear on sources of funding, they are less clear on the proportion of the national budget allocated to disaster risk reduction. As a result, disaster risk reduction appears to be skewed towards response rather than prevention (UN Economic Commission for Africa, 2014a).

The SADC plan of action on disaster risk reduction mainstreaming should be developed, supported and implemented with one of its key features being the development of sub regional and national guidelines on disaster risk reduction mainstreaming to facilitate disaster risk reduction integration across SADC directorates and units, as well as in national and subnational disaster risk reduction frameworks (Pellings& Holloway , 2006). The disaster

risk reduction capacity of sectors and decentralized bodies should be strengthened, (a) through stand-alone projects, in order to increase knowledge, skills and expertise to form the basis for disaster risk reduction mainstreaming into sector policies, programmes and projects, and (b) by supporting them to establish baselines on disaster risk reduction to ensure that gaps are identified, thus helping to guide the budgeting process.

The SADC secretariat should establish disaster risk reduction focal points across its directorates and units to facilitate disaster risk reduction mainstreaming into sub regional frameworks. Similarly, disaster risk reduction focal points across sectors in member States should be developed and strengthened in national and subnational bodies (UN Economic Commission, 2014a).

Sub regional and national level training on disaster risk reduction mainstreaming, informed by capacity needs assessments, should be enhanced to increase cross-sector awareness, with increased focus on the planning and finance sectors to facilitate allocation of resources (World Bank, 2012). To add more value to the Hyogo Framework for Action monitor self-reporting system, the SADC secretariat should consider establishing regional peer review of disaster risk reduction progress to, (a) reduce the possibility that countries report a more positive picture than the reality on the ground, and (b) share and disseminate lessons learned, good practices, tools and methodologies

2.7 Public Health Emergencies in Zimbabwe

Betera (2011) of the Civil protection Unit of Zimbabwe profiled the following disaster which are a threat to Zimbabwe: Biological disasters which are a threat to Zimbabwe are Malaria, cholera, Typhoid, HIV/AIDS, infectious disease, Animal epidemics which include foot and mouth, new castle disease, Zoonotic diseases like Anthrax and rabies crop pest locust, qualia birds and army worm. He also listed Environmental degradation, fires, crowd control problems(stampedes), land mine fields, Technological hazards like transport accidents, chemical spillages/explosions, toxic waste, air and land pollution, Earth quakes, thunder storms and lightning, storms and hailstorm damage, floods and drought as some of the disasters, whilst OCHA and NGO in Zimbabwe highlighted in its Zimbabwe Contingency Plan (2012-2013) gastro-intestinal infection (GTI) as one of the hazards to plan for, GTI include cholera, diarrhoea, dysentery and typhoid.

It is highlighted in the contingency plan that the risk of contracting and transmitting GTI is still high due to gatherings which cannot be avoided such as weddings, funerals, church gatherings and traditional gathering. These gatherings are unavoidable but the risk of transmitting GTI can be minimized by preparing and monitoring of these gatherings.

The question is "do our communities see with the same eye as the National Civil Protection Unit on the identified hazards and do they perceive these as hazards at all?"

Zimbabwe experienced its worst drought in 2001 which affected 6 million people, with other drought coming in 2007 and 2010 affecting 2 100 000 and 1 680 000 people respectively.

The worst epidemic was the cholera epidemic of 2008 which affected 983 49 people with the last cholera epidemic being experienced in 1996 and was reported to have affected 50 000 people.

The records since 2000 indicate that disasters are clearly on an increase and there is need to forecast and prepare for these hazards for there to be a reduction on loss of life and properties. In Zimbabwe monies which were supposed to be used for development were used in 2008/9 cholera outbreak which lasted almost half year. This could have been reduced with proper preparedness and response planning (WHO, 2016). In its 26 May 2010 Humanitarian Action update UNICEF indicated that it required US$17million to respond to measles, cholera and typhoid which clearly indicates the burden of public health emergencies on the economy of the country. Whether the disaster was caused by disease, natural disaster, or manmade like terrorist attack, these threats lead to the onset of a public health emergency. The aftermath of the 2001 terrorist attack in America, Hurricane Katarina in 2005 and SARS in 2003 were so evident that it gave rise to the need to prepare for emergencies. Being prepared to prevent, respond and rapid recovery can save lives and protect the health of the public (CDC 2009). Ebola in West Africa gives rise to the need to be prepared for emergencies.

2.7.1. Emergency preparedness and response in Zimbabwe

In Zimbabwe emergency preparedness and response is the prerogative of the Ministry of Local Government Rural and Urban Development with the Department of Civil Protection (DCP) in the same ministry charged with the overall coordination of disaster management as well as stakeholders. The formation of the CPD and committees is enshrined in the Civil Protection Act no 5 of 1989 (Betera, 2011). National civil protection policy states that "every citizen of Zimbabwe should assist where possible to avert or limit the effects of disaster"

(Betera, 2011). Community participation becomes important with their involvement from risk identification, planning for reducing these risks. This is why the researcher assessed the capacity of rural community in preparedness and response to public health emergencies. Disaster management is implemented through the National Civil Protection coordination committee (NCPCC) at national level with Provincial Civil Protection Coordinating Committee and District Civil Protection Coordination Committees below it (OCHA 2012).

STRUCTURE OF CIVIL PROTECTION ORGANISATION IN ZIMBABWE

	COORDINATOR	COORDINATOR/PLANNING COMMITTEE
NATIONAL LEVEL	Minister- LGR&UD Civil Protection Directorate Secretariat	National Civil Protection Committee(NCPC) with Multisectoral representation (Sister Ministries/departments/parastatals UN, NGO representatves)
PROVINCIAL LEVEL	Provincial Adiministrator (LGR&UD)	Provincial Civil protection Committee (PCPC) with multisectoral representation (Sister Ministries/departments/parastatals UN, NGO representatves)
DISTRICT LEVEL	District Administrator (LGR&UD)	District Civil Protection Committee (SCPC) with multisectoral representation (Sister Ministries/departments/parastatals UN, NGO representatves)

Figure 2.2:**Structure of Civil Protection Organization in Zimbabwe (*Source:*** (OCHA 2012)

The Central Government initiates disaster preparedness through relevant ministries with local Government taking responsibility for implementing and maintaining effectiveness (Betera 2011). NCPCC is composed of permanent members from selected ministries, departments, parastatals and NGO. CPCC at every level are grouped into functional subcommittees with

the relevant Ministry chairing the committee. The Food supplies and Food security committee is chaired by Ministry of Public service Labour and Social Welfare; Health, Nutrition Welfare Committee is chaired by Ministry of Health and Child welfare; Search, Rescue and Security is chaired by the Zimbabwe Republic Police whilst International Cooperation and Assistance is chaired by Ministry of Finance. The United Nations – Humanitarian Coordinator and the DPD coordinates strategic response with the involvement and collaboration of all humanitarian actors from GOZ, UN and NGO community and Private sector. NGO partnerships have come up with clusters for specific emergencies and currently the Environmental Health Alliance composed of the WASH and Health Cluster, Food and Protection clusters are active (OCHA 2012).

For the purpose of emergency preparedness and response the Zimbabwe Government has set aside National Civil Protection fund, and also receives support from NGO which are conducting Disaster Risk Reduction programmes in the communities whilst OCHA has an Emergency response Fund, there is $250.000 to kick start response in times of emergencies (OCHA 2012). The structure above clearly leaves out the Ward level where the community should be responsible for managing disasters in their areas. The diagram below illustrates the emergency preparedness planning process in Zimbabwe:

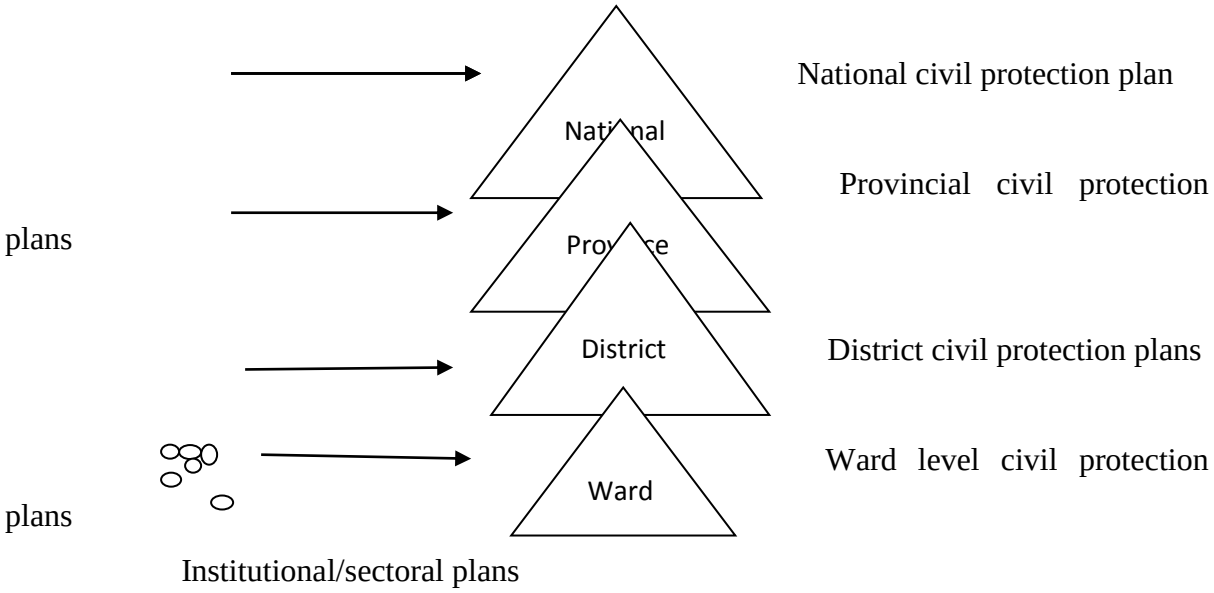


Figure 2.3 Emergency Planning Process in Zimbabwe (Source: *Betera, 2011)*

According to Betera (2011) emergency preparedness planning is bottom- up process with ward level plans being incorporated into district plan together with sectoral/institutional plans, consolidated district plans are incorporated in the provincial plans and to National level? This is the ideal process which needs to be verified and see how are the communities involved in planning strategies for emergency preparedness and response. The civil protection structure as indicated by Betera ends at district level; this gives a rise to questions on the role of communities in emergency preparedness and response.

2.7.2 Zimbabwe's preparedness and response Capacity

According to OCHA (2012) Zimbabwe's potential capacities includes legal frameworks and instruments for disaster risk reduction in form of Civil Protection Act which is being reviewed, and the Disaster Risk reduction policy and a functional national platform with wide cross sectional representation from Government, UN agencies, Local and international NGOs which is complemented by relatively functional civil protection committees at all levels.

The Government also have department dedicated to civil protection (OCHA 2012). Zimbabwe has a strong institutional and technical capacity to prevent, mitigate, prepare for, respond and recover from hazards identified.

2.7.3 Public health emergency preparedness and response in Zimbabwe

The Ministry of Health and Child Care (MOHCC) is responsible for public health emergencies in the country (Pawadyira, 2009). According to Pawadyira (2009) Zimbabwe has a well-developed health infrastructure providing for both clinical and public health services from National to Sub-district level. Pawadyira's statement is however not in agreement with Erick Pruyt (2009) and Michel Yao (2011) who cited deterioration in sanitary and health infrastructure characterized by lack of safe water and health services which led to the 2008 Cholera outbreak. Yao (2011) also cited shortage of health workers, medical supplies and equipment as other contributing factors to outbreak. This gives rise to the need to assess the capacity of our rural health centre to prepare and respond to outbreaks.

The MOHCC has established an Emergency Operation Centre (EOC) which evolved from the cholera control and command centre (C4) which was establish in 2008 during the Cholera outbreak (OCHA , 2012). The Ministry of health has established Emergency Preparedness and Response Committees at both National, Provincial and District level which are charged with the development and oversee the implementation of emergency preparedness strategies,

action plans and procedures, EPR committees work with their counterparts at National, Provincial and District level (Civil protection committees) to plan and monitor the implementation of public health emergency plans (MOH&CW &WHO 2011).

The ward and village level are clearly left out without clear roles and responsibilities being mentioned. MOHCC has also established technical teams at each level: the Rapid Response Team which takes lead in response to outbreaks investigates, confirm outbreak and initiate response (MOH,CW&WHO , 2011).

The MOHCC through the Department of Epidemiology and disease control (EDC) established immediate disease notification system (IDNS) which monitors thresholds of specific diseases and notifies if thresholds are surpassed (OCHA 2012). Capacity to prevent, mitigate, prepare and respond to Gastro-intestinal infections includes National Sanitation and Hygiene strategy, Water, Sanitation and Hygiene promotion coordination structure such as National coordination Unit (NCU), WASH Cluster, Water and Sanitation Sub-committees, Cholera guidelines, Typhoid guidelines (OCHA ,2012). MOHCC has also adopted and adapted the WHO- Integrated Disease Surveillance and Response (IDSR) strategy for National public Health surveillance and response system in November 2002 (MOH&CW, WHO 2011). The IDSR strategy is the corner stone for Public health emergencies preparedness and response in Zimbabwe, in other words Zimbabwe public health preparedness and response is centred on proper implementation of IDSR strategy.

2.7.4 What is integrated disease surveillance and response?

IDSR is a strategy for strengthening disease surveillance, laboratory and response capacities at each level of the health system (MOH&CW, WHO 2011). All levels in the health system are capacitated to identify cases and events of priority, report the cases, to capacitate and analyse data on emergencies, to prepare for emergencies, to investigate emergencies and respond. There are steps in disease surveillance which when followed enhance preparedness and response capacity to public health emergencies, the steps are stated by World Health Organization as follows:

Step 1: Identify cases and events

Health workers conduct surveillance activities in their areas so that they can detect health problems of concern to their communities. The Government has identified priority conditions which must be monitored throughout the country and have gazetted notifiable diseases in the Public Health Act chapter 15:09.

Standard case definitions are used to identify diseases and conditions; this ensures that every case is diagnosed in the same way regardless of where or when it occurred or who identified it (WHO, 2011). Community use simple community definitions for identification priority conditions. (WHO, 2011).

Step 2: Report

According to IDSR guidelines suspected cases and conditions are reported to the next level, epidemic prone conditions, diseases targeted for elimination or eradication are reported immediately, whilst other conditions are reported on weekly bases, others on monthly bases and of our concern are those which require immediate reporting. Communities should be aware of diseases and events which require immediate reporting (WHO, 2011).

Step 3: Analyse and interpret data

Organizing and analysing data at each level where it has been collected is very important since it provides information which will be used for timely, appropriate public health response. Data is analysed by time, place and person (WHO, 2011). This gives information on which diseases are prevalent in a particular area and those mostly affected. Trends for diseases are observed over a period of time, trends helps to indicate whether trends are improving or worsening. The MOHCC has set thresholds for diseases of concern, if the threshold is surpassed it would trigger a reaction. IDSR encourages involvement of communities in observing and interpreting disease patterns and trends in their communities.

Step 4: Investigate and confirm suspected cases, outbreaks or events

In Zimbabwe, districts have the overall responsibility for investigating outbreaks, public health problems and events (WHO, 2011). According to the national guidelines there are diseases in which occurrence of one case triggers taking of action like reporting to the next level and conduction of an immediate investigation, in other diseases response is triggered when the threshold of that disease has been surpassed, e.g. malaria.(WHO 2011).

Investigation include verifying reported information, confirming the outbreak through laboratory testing and reviewing of clinical data, it would also include taking immediate action like isolation of cases, treatment and searching for more cases.

The community plays the role of supporting the investigation by informing and reporting other cases and communal deaths.

Step 5: Prepare for and respond to outbreaks and other public health events

Steps should be taken before outbreaks or emergency of public health events so that response to the events will be prompt, effective and efficient to prevent unnecessary deaths and loses.

Emergency preparedness is as the main role of the District in the IDSR guidelines, preparedness include setting up and emergency preparedness and response committee, identifying the rapid response teams, mapping available resources, estimating required supplies and procuring them, capacitation of health workers and communities to respond to outbreaks. It will be the responsibility of EPR committee to draw up an EPR plan for their area taking into consideration priority conditions in their areas. The EPR committee should be comprised of all stakeholders in health matters including the community. The EPR plan should specify roles and responsibilities of the EPR committee, RRT, clearly map the risk conditions for the area, provide estimates of the communities at risk; it should have strategies for disaster risk reduction, action to be taken in outbreaks. Community is very important in EPR planning since they are the ones who will be affected by emergencies and are also the ones who will implement the risk reduction activities, communities also participate in risk mapping of potential hazards, managing emergency stocks, participate in simulation exercises and training. (WHO, 2011).

Step 6: Respond to outbreaks and other public health events

An appropriate public health response is required to minimize causalities. The type response is guided by investigation conducted. The EPR committee convene a meeting, assign responsibilities, ensures that all resources for response are available and have been deployed to the needy areas, appeals for funds and resources from Provincial and National level, health staff will be reoriented on the condition, mobilize teams for immediate action, implement the response activities: these include informing and educating the community about the outbreak, their role and what action they should take in the outbreak, updating health workers' skills, case management and infection control, enhancing surveillance during response, mass vaccinations, improving access to water and sanitation, improving food handling practices, reducing exposure and environmental hazards. Regular updates on the outbreak are given; the team also evaluate the outbreak response activities (appropriateness, effectiveness, timeliness and level of resources mobilized).

Step 7: Provide feed back

Communication is very important at all levels. A detailed report of the outbreak would give decision markers information about the outbreak and would allow them to review how

resources where used to contain the outbreak, identify problem and how best they would have tackled it, giving feedback to stakeholders and the community would demonstrate transparency in the management of the outbreak, health workers should also be informed of how they performed, this helps for self-evaluation.

Step 8: Monitor, evaluate and improve surveillance and response.

Routine and continuous tracking of planned surveillance activities (e.g. reporting, data collection, recording, and analysis) is very important as it improves the surveillance and response. Periodic assessment on whether surveillance and response objectives are being met gives information on the state of preparedness and response and effectiveness of the surveillance system. Information on timeliness, quality, preparedness, thresholds, case management, prevention activities are assessed, action will be taken to correct any challenges and make improvements. Health system levels are stated by the MOHCC (2011) as community, health facility, District, Province and National levels. Each level plays a critical role in emergency preparedness and response.

2.7.5 Role of community in emergency preparedness and response

The World Health Organisation (2000) defined community as the people and environment at a local political and administrative level. This study will take people at ward and village level as a community. The key to emergency preparedness is the involvement and commitment of all relevant individuals and organization at every level –community, provincial, national and international (WHO, 2000). Preparedness is a bottom-up system; the community should be integrated into the planning and exercising for emergencies (Nelson *et al* (2008). According to WHO (2001), the main principle of emergency preparedness is community participation. Community participation is achieved when the community is made aware and educated in order to reduce vulnerability, this increases preparedness. Community also use their local knowledge (indigenous knowledge) and expertise in making decisions that concern them, this ensure policies and practices that allows self-determination and maximum community participation. Communities also use their resources in preparedness, assist in determining priorities and carrying out the activities in emergency preparedness. Incorporating emergency preparedness in existing structures would ensure that there is cooperation between professionals and volunteers (WHO, 2001).

2.7.6 Why prepare for emergencies

According to the WHO (2001) being prepared for disaster reduces the number of people who die from disasters, reduces physical damages, psychological trauma, deaths are reduced when people are ready to respond quickly and effectively. According to WHO (2001) community preparedness would reduce casualties by 65% in the first 24 hours of disaster.

Vulnerability to disasters is reduced with preparedness, mitigation measures are put in place to reduce vulnerability, factors that puts people at risk and limit ability to cope can be changed (Manitoba ,2002).

Emergencies preparedness builds up community resilience to disasters, according to Manitoba preparing coping resources at both individual and community level ensures that the effects of a disaster are reduced to minimum levels. It prepares the health care system to cope with disasters and creates systems that is capable of responding to disasters and provide essential services during a disaster (Manitoba 2002). Phaijn (2010) summed it up by saying *"*preparedness increases the community's ability to respond effectively to hazard impacts and to recover quickly from the long term effects*"*. Kofi Annan (2005) also concluded it by saying that more effective prevention measures would save not only tens of billion dollars, but save tens of thousands of lives, he went further to highlight that building a culture of prevention is not easy and the cost of prevention have to be paid in the present with benefits in the distant future. He also indicated that the benefits of preparedness are not tangible but they are the disasters that did not happen.

2.7.7 Emergency Preparedness and response Capacity

According to Betera (2011) capacity is a combination of strengths, resources, skills or knowledge available within an individual, community, society, organization or country to reduce illness, disability or death from hazards and promoting health, safety and security.

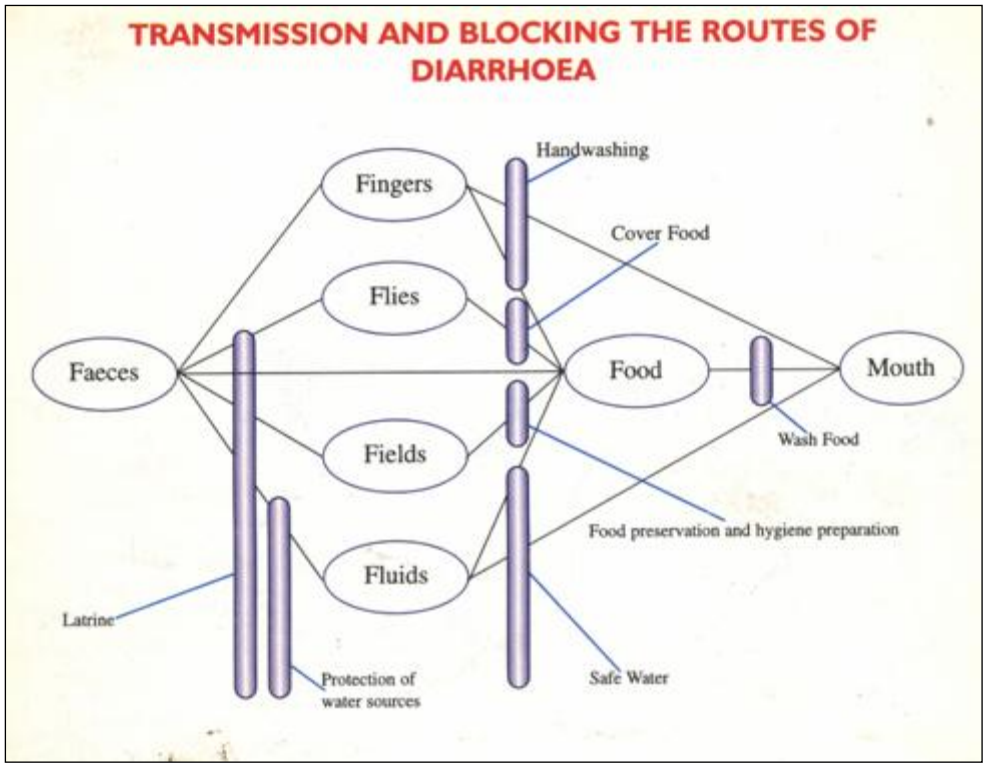
He categorized capacity into institutional capacity, policy capacity, community capacity, preparedness capacity (prevention, mitigation (anticipating, forecasting, monitoring), response and rehabilitation or recovery.

2.7.8 Transmission of Diarrheal diseases

According to Alberini*et al.,* (2006) diarrheal diseases are attributed to ingestion of water or food contaminated by faecal coliforms or other pathogens; this is known as faecal-oral transmission, meaning faecal matter from an infected person is ingested by a health person

either through contaminated water or food. As per UNICEF illustration in the diagram below shows that drinking water can be contaminated by faecal matter which has been disposed through open defecation (OD). Contaminated water is then drunk as raw or used to prepare food, or flies pick the faecal matter to food, crops can be contaminated when irrigated with waste water or fertilised by human faecal matter.

Hands contaminated by pathogens can be used to prepare food, or to eat food thereby transmitting diarrhoea to the next person. Most of the majority of vehicles that transmit pathogens from human stool results in the contamination of food and water, so food and water becomes the major transmitters of diarrhoea directly reaching the mouth of the next person. This was also confirmed by Coertzer*et al*., (1989) who said that infective diarrhoea is transmitted by oro-anal route through fomites, flies, unwashed hands and especially contaminated water and food. According to the WHO and MOH&CW (2009) the main source of diarrhoea and cholera in Zimbabwe was drinking water contaminated at source.



Source: *MOH and UNICEF: Zimbabwe National Sanitation Week 10-16 September 2001 Pamphlet.*

Figure 2.4 Faecal-Oral transmission routes of Diarrhoea and blocking the routes

Diarrhoea is more prevalent in developing countries worldwide due to lack of safe drinking water, poor sanitation and hygiene (WHO&UNICEF 2009). In Zimbabwe 33% of the

population practices open defecation with 43% of the rural communities having access to improved sanitation (GOZ , 2011). Esry*et al*., (1990;1991) cited in Harvey (2007), states that, having improved access to safe and adequate water reduces diarrhoea by 15-20%, marked in improvements in reduction of diarrhoeal diseases are realized with proper excreta disposal (22%) and hand washing(25-42%).

These three, availability of safe water, proper excreta disposal and hand washing using soap should be practiced concurrently to realize effective prevention of enteric fevers. When we talk of mitigation and prevention of enteric fevers we are talking of the three.

According to the diagram above mitigation measure against diarrhoea include use of toilets, provision of safe water, hand washing hygiene and food hygiene. Prevention of all diarrhoeal diseases is through blocking the routes of transmission, so an all- hazard preparedness plan should be put in place to contain all diarrhoeal conditions.

2.7.9 Knowledge gaps

The researcher reviewed studies on disaster management that were carried out in UK, Haiti, Nigeria, SADC and Zimbabwe. UK is a sophisticated society with resources to cater for disaster preparedness and effective response. Disasters such as floods, storms, flashes, heat waves and of late terrorism are prevalent in that country. These disasters are not common in Zimbabwe. Haiti is a country that has suffered the blunt of earth quakes and cholera. Just like Zimbabwe it is a developing country. However Haiti when it was hit by disasters it got tremendous support from other countries such as America. Funding has also been provided to cater for the development of water and sanitation infrastructure.

Zimbabwe has suffered from donor fatigue exacerbated by the targeted sanctions. As a result of the sanctions Zimbabwe is struggling to get new lines of credit to fund infrastructural developments. The Haiti Government, immediately after the country was hit by cholera, declared the outbreak a national disaster. Unlike in Zimbabwe were it took more than 3 months before the government publicly accepted that the outbreak was a national disaster. There was lack of political will power. Haiti has an acute shortage of trained health personnel. Zimbabwe, during 2009 to 2010 had a similar challenge as highly experienced clinicians and other health professionals were skipping the country in search of greener pastures. This was a response to the declining economy. Nigeria was also reviewed. It is a developing country however it has a robust economy buoyed by oil. South Africa experiences floods and mine accidents.

South Africa has similar structures with Zimbabwe, however South Africa has well-resourced structures, and this can be attributed to its growing economy. The researcher by conducting this study sought to fill a gap of a health related disaster in Zimbabwe. Zimbabwe is one of the poorest countries in the world. It has experienced unprecedented economic meltdown. The state of the economy has severely affected the health delivery system. The health delivery system is bedevilled by massive brain drain of qualified and experienced nurses, doctors and other health professionals.

The frequent occurrence of diarrheal disease outbreaks has been attributed to the fact that the major risk factors identified through various assessments have not yet been fully addressed in both urban and rural areas. The surveillance system which is the basis for early warning and detection of outbreaks is still functioning at less than the recommended thresholds. Integrated disease surveillance and response is the most critical strategy for improving disease surveillance and response to outbreaks and other public health emergencies. However, training of health workers in this strategy has not been rolled out to all districts. Only Chimanimani district health workers were trained in 2012 (OCHA, 2012). Through this study, the researcher sought to come up with recommendations which would assist the Zaka community and other communities to be well prepared for cholera outbreak.

2.9 Summary

The researcher looked at the literature that authors produced on cholera preparedness and response at international, regional and local levels. Literature was reviewed to get an insight into the topic under study and the benefits of this to the stakeholders. The causes of lack of preparedness took on a common themes across the various sources consulted. The next chapter focused on research methodology.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter looked at research methodology used in this study, research design, population and sample, sampling techniques, research instruments, design procedures, ethical considerations, issues of validity, reliability, data collection techniques, data management, data analysis and summary was given at the end of the chapter.

3.2 Research design

The researcher used qualitative descriptive design to investigate the cholera preparedness and response. Shank (2002: 5) defines qualitative research as "a form of systematic empirical inquiry into meaning". Denzin and Lincoln (2000:3) claim that qualitative research involves an interpretive and naturalistic approach: "This means that qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them". Qualitative research allowed me to flexibly follow unexpected ideas during research and explore processes effectively; sensitivity to contextual factors; ability to study symbolic dimensions and social meaning; increased opportunities , to develop empirically supported new ideas and theories; for in-depth and longitudinal explorations of issues. Criswell and Clark (2011) defines research design as "the formal plan for conducting the action research study- it is the blue print that specifies exactly how the study will be carried out". According to Leedy (2005) the research design enables the researcher to select subjects and site. In this case a qualitative and descriptive survey was chosen as the best research design for this study because it involves acquiring opinions , attitudes or characteristics such as population's behaviour and practice on health and hygiene. The research design is meant to bring more understanding of community issues. The research design was augmented by asking probing questions during focus group discussions. A questionnaire with structured questions was administered first, followed by focus group discussions(FGD) in order to have some in-depth discussions which focused on specific issues addressing the research questions. The study endeavoured to capture opinions, beliefs, perceptions and behaviour of Zaka communities with regard to disaster preparedness and response.

3.2.1 Justification for using descriptive survey

According to Hulley (2001), the descriptive research approach has been used by many researchers for many years and it is well defined, and it has precise procedures which, when followed closely, yield valid, reliable and easily interpretable data. The descriptive survey enabled me to save on time and the expenses were relatively low and manageable. The researcher through the descriptive survey managed to visualize the picture of the obtaining situation while recording up to date data in a reasonable short time at low costs with the use of an interview guide. The survey enabled me to describe the characteristics of a large population.

3.2.2 Weakness of the descriptive survey

Newton (2005) alludes to the fact that the assessment on the use of survey research in social science research between 1980 and 1990 indicated that descriptive survey methodology were often misapplied and plagued by certain important weaknesses which are:

Low response rates especially when you are using questionnaires, marred by unsystematic and often inadequate sampling procedures. In this study the researcher used systematic sampling in selecting respondents from the Zaka communities. In most cases the single method design is used where multiple methods are needed. In this study the researcher counteracted the weakness through triangulation. The qualitative approach was used in the investigation of the state of cholera disaster preparedness by the Zaka communities. Triangulation of information gathered through observations and interviews was also done.

3.3 Population and Sample

3.3.1 Population

Maxwell (2005) defines population as the collection of all elements (either known or unknown) from which a sample is drawn. Burns (2009) defines population as an entire group of people, objects or events which have at least characteristics in common. Population is the establishment of the boundary conditions that specify who shall be included or excluded from the study. Wright (2000) describes a population as an entire group of people or objects that is of interest to the researcher or meets the criteria that the researcher is interested in studying. In this study the population is the Ministry of Health and Child Care staff, Ministry of Local Government and community members.

3.3.1 (i)Target Population

Target population refers to all members or objects to which the researcher wants to generalize study findings (Patsika&Chitura, 2004). The target population can also be defined as the entire group of individuals or objects to which researchers are interested in generalizing the conclusions, and has varying characteristics. The study was conducted in Zaka rural district which has a population of 50 240 people (ZimStat , 2012). The study was carried out in three wards 14, 16 and 21. These 3 wards have a population of two thousand people. One thousand and two hundred are females and eight hundred are males. 46 household respondents were interviewed, 30 of the respondents were directly affected by the cholera outbreak of 2008, the other 16 were not affected, and four key informants from two rural health facilities and two health committees for the health centres were interviewed. The researcher interviewed the District Administrator who chairs Civil Protection Unit. Zaka is one of the 7 districts of Masvingo Province and it is 86 km south Masvingo. The population's livelihoods are hugely dependent on subsistence farming. The district has 34 wards serviced by 21 health centres, and 2 Hospitals namely Ndanga District Hospital and Musiso Mission Hospital. Two health institutions and 3 wards which were heavily affected by the Cholera epidemic were studied.

3.3.2 Sampling procedures

Burns (2009) defines a sample as a part of the population or cross section of a large group. A sample is therefore a presentation of the population. Aryetal (2005) concur that sampling is the process of systematically choosing a sub-set of the total population one is interested in. Sampling then is taking a portion of a population or universe as representative of that population or universe. For a sample to be useful, it should reflect the similarities and differences in the total group. The 3 wards (14, 16, and 21) comprise of 2000 people. From this huge figure the researcher sampled 46 villagers this was largely because it was not feasible to study the entire population due to time and financial constraints.

The disadvantage of sampling is that it compromises the level of accuracy in the findings. The big figure which was sampled made it easy to generalise the findings to the Zaka community. The study focused at the community, health institutions and Ministry of Local government officials in Zaka district.

3.3.2.(i) Purposive sampling

Purposive and random sampling was used to select participants for this research. Gay (2008) avers that purposive sampling is selecting subjects because they pose some characteristic of interest to the researcher. Purposive sampling was used because it enabled the researcher to gather large amounts of information by using a range of different techniques. Cohen etal (2007) state that this type of sampling is based on the judgement of the researcher. A Judgement is made about which participants should be selected to provide the best information. Purposive sampling was used to select wards. The wards that had high incidents and high case fatality rate during the cholera outbreak of 2008-2009 were chosen. Nurses, Environmental Health Technicians, Officials from Ministry of Health and Local Government who are responsible for public health planning and management were selected through purposive sampling.

3.3.2 (ii) Random sampling

According to Gay (2008) random sampling is the basic sampling technique where we select a group of subjects (a sample) for study from a larger group (a population). Each individual is chosen entirely by chance and each member of the population has an equal chance of being included in the sample. Every possible sample of a given size has the same chance of selection. Random sampling was used to identify villages where households were selected, each village was allocated a number, one village was randomly picked from a hat, 46 households were identified using simple random selection for interviewing, using the scale 1, 2, 3, the third house was picked for interviewing. Random sampling was used due to the following advantages: it needs only a minimum knowledge of the study group of population in advance; it is free from errors in classification. Simple random sampling is representative of the population and it is simple to use.

Research Instruments

. Research instrument is a testing device for measuring a given phenomenon such as a paper and pencil test, an interview a questionnaire, a research tool or a set of guidelines for observation (Macniff, 2012). Research, instrument is what you use to collect the information in a qualitative field, study or observation. It helps to keep track of what is observed and how to report it. It must be both valid and precise (Burns and Grove, 2003).

In this study the researcher used interview, questionnaires, observation and data analysis as the data collection tools.

3.4.1. Interviews

. The Research interviews are classified according to their purpose and design. In terms of purpose, interviews seek either objective information in the form of facts or subjective information in the form of attitudes, beliefs and opinions. In terms of design, interviews can either be structured or unstructured (Creswell, 2013). In this study a structured interview was used. According to Creswell (2013), a structured or standardised interview is one in which the procedure to be followed is determined in advance. The interviewer is allowed to depart from the set questions as well as their order of presentation as the situation demands. Interview enabled the gathering of much of the needed information about the study. Through open ended questions I managed to elicit more information about the study. The interview also accorded an opportunity for probing and seeking of clarification on unclear issues, questions were adapted in response to the feedback received in order to probe for further information or to verify previous comments, the face-to-face interviews accorded the opportunity to analyze non-verbal communication in order to identify instances of conflict between verbal and non-verbal behavior. On the other hand the interview sessions tended to take long as the study participants had a lot to say.

3.4.1 (i) the use of the interviews in this study

The researcher interviewed 60 households from wards 14, 16 and 21. The researcher had two focus group discussions with community members using structured interviews. The researcher conducted one on one interviews with community members in the afternoon after they were done with their domestic chores. The interviews consumed a lot of time. The researcher managed to complete the interviews within the set time courtesy of the assistance he got from 2 assistant researchers

3.4.1(ii) Designing the Interview

Having decided to use interviews as the main data-collection method in this study, there followed the preparation of the interview schedule itself. This involved translating the research questions guiding the entire study into items that would make up the main body of the schedule.

This needed to be done in such a way that the questions adequately reflected what it was the researcher was trying to find out. I began this task by writing down the variables to be dealt with in the study. As one commentator says, 'the first step in constructing interview questions is to specify your variables by name. Your variables are what you are trying to measure. They tell you where to begin' (Criswell, 2013).

The choice of the interview guide format was guided by : the objectives of the interview; the nature of the subject matter; whether the interviewer was dealing in facts, opinions or attitudes; whether specificity or depth was sought; the respondent's level of education; the kind of information the respondent was expected to have and the extent of the interviewer's own insight into the respondent's situation, the kind of relationship the interviewer was expected to develop with the respondent during the study period (Grix, 2004). Having given prior thought to these matters, I made a decision to use open questions. The researcher with the assistance of 2 research assistants is going to conduct the interviews. Given the low literacy rate in the area interviews were used to solicit for information from the 46 villagers.

3.4.2. Questionnaire

According to Babbie (2010) a questionnaire is a document containing questions that are designed to solicit information that is appropriate for analysis. In concurrence Merriam (2009) takes a questionnaire as a form prepared and distributed to secure responses to certain questions. It is mainly used where one is unable to see individually the entire people one would like to question. In the same vein Kombo and Tromp (2006) argues that a questionnaire is a research instrument that gathers data over a large sample. This is a systematically prepared form or document with set of questions deliberately designed to elicit responses from respondents of research informants for the purpose of collecting data or information. Merriam (2009) asserts that the answers provided by the respondents constitute the data for the research. It can reach a large number of subjects who are able to read and write independently. The researcher used open-ended questionnaires which are easy to analyse administer and economic in terms of time and money. . Cohen and Manion (2011) are of the view that a questionnaire enhances anonymity of respondents and uniformity of questions, thus allowing comparability. The use of closed ended questionnaire is easy to analyse, administer and economic in terms of time and money. This method provided a fairly high proportion of usable responses which was reached without much difficulty.

Thus the researcher got more information from the key informants largely because the questionnaires were easy and straight forward to understand with given instructions. The questions were structured, designed in such a manner that the respondents easily understand. The questionnaires were delivered by the researcher to the respondents by hand. In this study 4 questionnaires were used to collect data from key informants from the Ministry of Health and Child Care.

3.4.3 Document analysis

According to Cohen et al (2007) documents are records of specific episodes which define certain events. Documentary data can be useful as it provides information that can guide the researcher. In this study the researcher reviewed minutes of health centre committee meetings, T12, health facility emergency plans, disease surveillance reports at the rural health centres as sources of data. Document analysis helped the researcher to overcome the difficulties of encouraging research participants to freely provide information and there were few costs involved. Staff freely provided the registers, meeting minutes and reports. The researcher took advantage of the good rapport and mutual trust between his organization and the Ministry of Health and Child Care to access documents that he wanted.

3.4.4 Focus group discussions

According to (Wikipedia, the free encyclopaedia) a focus group is a form of qualitative research consisting of interviews in which a group of people are asked about their perceptions, opinions, beliefs, and attitudes towards a product, service, concept, advertisement, idea, or packaging. Questions are asked in an interactive group setting where participants are free to talk with other group members. During this process, the researcher either takes notes or records the vital points he or she is getting from the group. Researchers should select members of the focus group carefully for effective and authoritative responses Focus group discussion is going to be used to ascertain perspectives and experiences from people on the topic. Non-structured questions shall be used for focus group discussions. Discussion proceedings shall be recorded in a minute book. The researcher and 3 research assistants are going to conduct the interviews. Digital camera is going to be used to take photographs of any emergency preparedness and response structures put in place to mitigate against health hazards.

3.4.4(i) Ethical considerations

According to Australian Government Law Reform Commission (2000) ethical considerations are an accumulation of values and principles that address questions of what is good or bad in human affairs. Ethics searches for reasons for acting or refraining from acting; for approving or not approving conduct; for believing or denying something about virtuous or vicious conduct or good or evil rules. In research when human beings are used as subjects for study, great care must be exercised in ensuring that the rights of the subjects are protected (Polit& Hungler,2004). Every prospective subject should have the opportunity to choose whether or not to participate in the research study (Burns & Groove, 2005). Hence, in this study the ethical principles such as informed consent, privacy, and confidentiality were maintained. The researcher established a connection with individuals being interviewed or responding to the questionnaire, and was not intimidating the respondents (Tewksbury 2009). Security and safeguarding of an individual's privileges by using the route of informed consent for the participants . The confidentiality and anonymity of participants were maintained. What participants said would not be traced back to them when the final report was produced. Information supplied in confidence by the participants was not disclosed directly to third parties. Permission to carry out the research was sought from all the relevant authorities, namely the Ministry of Health and Child Care, Ministry of Local Government and Crown Agents .The participants were informed about the intended use of the results as well as where the copies of the thesis would be displayed.

3.4.4. (ii) Informed consent

Much social research necessitates obtaining the consent and co-operation of subjects who are to assist in investigations and of significant others in the institutions providing the research facilities. Frankfort-Nachmias and Nachmias (1992: 50) say: "When research participants are exposed to pain, physical or emotional injury, invasions of privacy, or physical or psychological stress, or when they are asked to surrender their autonomy temporarily (as, for example, in drug research), informed consent must be fully guaranteed. Participants should know that their involvement is voluntary at all times, and they should receive a thorough explanation beforehand of the benefits, rights, risks and dangers involved as a consequence of their participation in the research project" . Hence in this study, I explained that the purpose of the study was to find out how the communities can prepare and respond to disaster.

The information obtained would help to promulgate strategies that would ensure that the villagers are safe from disasters. All the participants in this research willingly signed voluntary consent forms.

3.4.4. (iii) Permission to conduct the study

In this study, permission to conduct the study was obtained from the Department of Adult Education-Midlands State University and Ministry of Health and Child Care. A pilot study was done on ten (10) participants who met the inclusion criteria to test the instruments for validity and reliability. Convenience and random sampling methods were used to select the subjects. The purpose and benefits of the study were explained to participants who willingly gave informed consent. For those who are below the age of (18) permission was sought from their guardians and parents.

3.4.4. (iv)The right to privacy and confidentiality

Privacy is defined in terms of a person having control over the extent, timing, and circumstances of sharing oneself (physically, behaviourally, or intellectually) with others. Privacy refers to the right of individuals to limit access by others to aspects of their person that can include thoughts, identifying information, and even information contained in bodily tissues and fluids (Plummer 2001). In my study privacy was upheld, to ensure that the respondents freely participated in the research. Plummer (2001) avers that confidentiality is the process of protecting an individual's privacy. It pertains to treatment of information that an individual has disclosed in a relationship of trust, with the expectation that this information will not be divulged to others without permission. Participants for key informants interviews, household interviews and Focus Group Discussion were informed of the research's aims and objectives. The researcher clearly informed the participant's that the information obtained was not be publicized and is strictly for academic purposes. Consideration was given to minimize risk in social and cultural setting during focus group discussions, participants freely advised the researcher of areas which they were not comfortable to discuss as a group during the discussion or before the discussions. The researcher endeavoured to create conducive environment for interviews and Focus Group Discussions.

3.5 Data collection procedures

Data collection is the systematic approach to gathering and measuring information from a variety of sources to get a complete and accurate picture of an area of interest.

Data collection enables a person or organization to answer relevant questions, evaluate outcomes and make predictions about future probabilities and trends (Marshall and Rossman, 2011). The aim of data collection is to get accurate, reliable data which is meaningful and which will answer the study research questions (Marshall and Rossman, 2011). I got an introductory letter from MSU introducing me as a research student. I took the letter to the Zaka District Medical Officer as a way of seeking permission to undertake the study. The district authorities granted me permission to conduct the study. Data was collected from 3 wards in Zaka district over a period of 10 working days from 0730 hours to 1600 hours. Data was collected through 2 focus group discussions, 4 questionnaires for key informants, 46 households were interviewed. Verbal consent and explanation of the study was done to obtain informed consent from each respondent. Interviews were conducted in privacy. Participants were interviewed for 20-25 minutes. Collected data is being kept in a double locked cupboard.

3.5.1. Pre-testing of research instruments

Pre-testing of the research instruments was done at the nearest ward to cut costs and save time since the researcher is fully employed. The instrument was also assessed for validity and reliability.

3.5.2 Validity

According to Grove (2004) validity is the measure of accuracy and truth of a study to exclude threats, bias, and strengthen generalisation of the study results. Validity describes what an instrument intends to measure. The researcher supervisor critically examined the content(s) of the questions and advised on the necessary adjustments. Ambiguous statements were corrected and rephrased to ensure validity. Triangulation was used to validate the research. Data obtained by the research was compared with the information obtained from the literature review. The researcher made sure that the informants were very clear on the nature of the research. He explained why he was there, what he was studying, how he was going to collect data and what he would do with the data. The researcher also managed to build a trust-relationship with the subjects since he has worked in that area for a long time. The researcher showed the field notes to the Crown Agents Monitoring and Evaluation Manager who is a seasoned researcher. He managed to point out where he thought the researcher had been misled.

3.5.3 Reliability

According to Burns & Grove (2004), reliability is a measure that gives the same results every time it is used. It also refers to the degree of consistency with which an instrument measures the attributes it is designed to measure. In this study, the instrument is going to be used for the first time therefore it shall be pre-tested before use. I further ensured reliability of the study by doing the following: by describing in detail how the data are collected, how they are analyzed, how different themes are derived and how the results are obtained. Therefore, this detailed information can help replicate the research and contribute to its reliability. Permission to conduct the research was sought from the Ministry of Health and childcare, Zaka Rural district Council and Crown agents who are the employers of the researcher

3.6 Data management

According to Whyte and Tedds (2011) data management concerns the organization of data, from its entry to the research cycle through to the dissemination and archiving of valuable results. The management of data to be produced is a highly important consideration in this study. Descriptive statistics were used to describe variables. The raw data was categorised according to the research questions. The collected data is being kept in a double locked cup-board to maintain confidentiality.

3.6.1 Data Presentation and analysis

Data analysis is the process of systematically applying statistical and / or logical techniques to describe, illustrate, condense and recap and evaluate data. According to Shamoo and Resnik (2003) various analytic procedures ‘’provide a way of drawing inductive inferences from data and distinguishing the signal from the noise (statistical fluctuations) present in the data”. Data from key informant interviews and focus group discussions was analysed using a thematic approach. Responses from key informants, focus group discussion were grouped under the themes used in data collection, coded then analysed to give conclusions. The following steps were followed in qualitative data analysis: The researcher processed research data manually. Data was presented using bar charts, pie charts and frequency tables followed by comments. The raw data was categorised according to the research questions and analysed using descriptive statistics.

Reponses from respondents were listed down; the researcher went through the responses and made categories from the responses based on what the question intended to find out from

respondents, each response was placed under the appropriate category. Analyses of responses in each category was done, compilation of data into compilation sheets with rows representing all respondents, categories and columns representing various aspects investigated. The results were interpreted and conclusions drawn. Statistical data from household questionnaires were analysed using MS Excel. Frequencies and tables were generated from the information.

3.7 Summary

The chapter outlined the methodical procedures used in this study. This descriptive survey used qualitative research techniques in collecting information. . Research instruments, data collection procedures; data management, data analysis and ethics were also highlighted. The next chapter focused on data presentation, analysis, interpretation and discussion.

CHAPTER FOUR: RESULTS/ PRESENTATION, ANALYSIS AND DISCUSSION

4.0 Introduction

This chapter consisted of data presentation, analysis and discussion of data collected and obtained from the interviews, questionnaires and focus group discussions in the previous chapter. The purpose of the study was to investigate the preparedness and response to cholera out breaks of the Zaka communities. The data was analysed through the use of codes, thematic analysis expressed in percentages. Forty six households participated in the study from wards 14, 16 and 21 in Zaka district. A hundred percent response rate was achieved. The researcher managed to collect demographic data on gender, age, work experience, marital status and educational level and this was followed by analysis of data.

4.1 Data presentation and analysis

Table 4.1: Gender, Age and level of education

N= 46

Age range	**Males**	**Females**
21-30	0	4
31-40	0	15
41-50	2	7
51-60	8	5
61-70	5	0
Total	**15**	**31**

The table above 4.1 showed gender and ages of respondents: Ages ranged from 21-70, four were aged between 21-30, twelve aged between 31-40, nine aged between 41-50, thirteen aged between 51-60 and eight aged between 61-70. Age range 21-30 had four respondents and all of them were women , 31-40 comprised of females only (15) , 41-50 age range seven females and two men, 51-60, five females and eight men, age range 61-70 comprised of five men only. There were more female respondents, than males.

The statistics revealed that in the 21-30 and 31-40 age ranges they were no males, males of these age groups were probably in towns or even in South Africa and other neighbouring countries, where they are working. More males were found in the age range of 51-70.

This age range comprises of retirees. Retired males relocate to their rural homes. A 65 year old man said ‘’ *taimboshanda Joni, mazuvaedu. Ikozvinotazvigariraheduku*nokumusha, *tavaharidzofanzirakufa’’*. Literally translated it means during our hay days we used to work in South Africa. We are now in the twilight zone of our lives hence we have come home to rest. This was affirmed by a middle aged woman who said ‘*most of these homesteads are manned by women. Their husbands are working in South Africa*’’.

Table 4.1.2 Educational levels

N.46

LEVEL OF EDUCATION	
Never went to school	3
Primary level	26
Secondary level	15
Tertiary level	2

The question that sought to find out the educational levels of the respondents showed that 6.5 % of the participants never went to school. Fifty six percent of the participants had primary education whereas 32.6 % participants had attained secondary level of education, four percent of the participants cited that they attained tertiary level of education. This illustrated that a large number of participants 93% interviewed are semi-literate. The statistics revealed that there is a significant percentage in the community who never went to school. The majority of those who went to school only managed to undertake primary education. This implied that with better education the community members could appreciate health and hygienic practices much better.

Table 4.1.3: Marital status

N=46

Variable **Marital Status**	**Frequency (N)**	**Percentage (%)**
Single	2	4%
Married	28	61%
Divorced	3	7%
Widowed	10	21%
Separated	3	7%
Cohabiting	0	0
Total	46	100%

Four percent of the participants were single while sixty one were married. Seven percent of the participants were divorced whereas twenty one percent of the participants were widowed. Seven percent of the participants interviewed were separated, and none were cohabiting. The data indicated that the majority of the research participants were married. There was a high number of widowed people, this could be due to the ravaging HIV and AIDS scrounge. There were no people cohabitating; this could imply that the community frowned on the practice.

Table 4.1.4: Experience of the health workers

N=46

Experience	**No. of years**
Nurse 1	13
Nurse 2	20
EHT 1	16
EHT 2	12

Two Nurses and two Environmental Health Technicians interviewed (100%) boosted of more than 10 years' experience on their jobs. The highest had 16 years and the least had 12 years of experience. The data showed that the health staff at the two clinics were highly experienced.

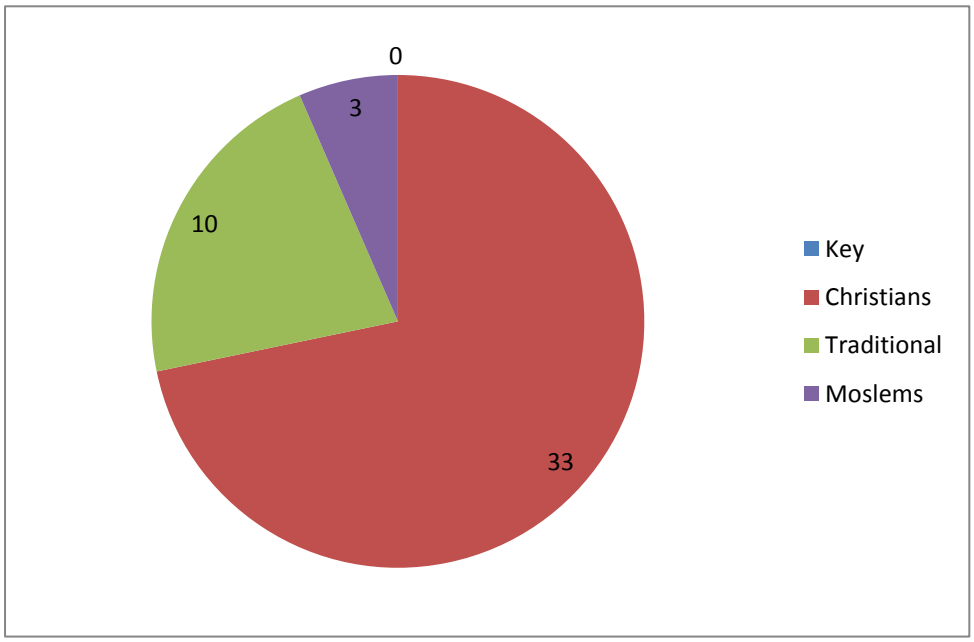


Fig 4.1 Religion of Respondents

Figure 4.1 revealed that the majority of the people interviewed (71%) were Christians, 7% were Moslems and 22 % were traditionalists. The data showed that the community was dominated by Christians.

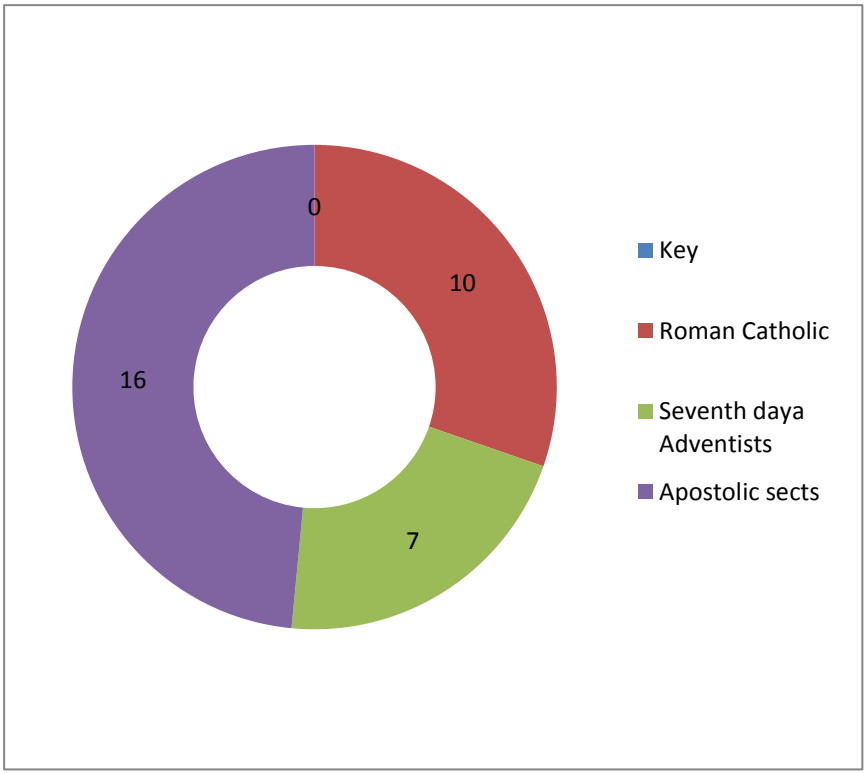


Fig 4.2 Churches which the respondents attend

Fifty percent of the respondents belonged to the apostolic sects. Thirty percent belonged to the Roman Catholic Church. Twenty one percent belonged to the seventh Day Adventist Church. The data suggested that the majority of the people in the community were members of the apostolic sects. A review of the clinic reports revealed that the members of the apostolic sects were categorised as religious objectors meaning people who shunned the health delivery system.

4. 1.5 Professional Qualifications

Designation	Qualification
Nurse 1	Diploma in General Nursing
Nurse 2	Primary Care Nursing Certificate
EHT 1	Diploma in Environmental Health
EHT 2	Diploma in Environmental Health

The question sought to find out the qualifications of the health staff at the two health facilities. Of the two nurses interviewed is a registered general nurse (RGN), a holder of a Diploma in Nursing, the other one is a primary care nurse (PCN), a holder of a Certificate in Primary Care Nursing. The two environmental health technicians (EHTs) interviewed were holders of diplomas in environmental health. The data suggested that the health workers were holders of basic health qualifications.

SECTION B

4.1.6 What is your understanding of the term disaster preparedness and response

Hundred percent of the health staff interviewed had an appreciation of what disaster preparedness and response entails. They said they had learnt about disaster management at college, Fifty percent of the informants had attended disaster management workshops 7 years ago during the 2008 cholera outbreak. Fifty percent had not attended any disaster management workshops. One of the nurses said '' we lastly learnt about disaster management at the school of nursing''. One of the nurses who attended a disaster preparedness and response training during the 2008 cholera outbreak said '' *several workshops were held during the last cholera outbreak. We were prepared through the training to handle the outbreak*''. Sixty percent of the households indicated that they had been trained on how to prevent and handle cholera during the 2008 cholera outbreak.

Some of the household respondents said ''*maworkshopsezvekudzivirira cholera akamboitwamugore ra2008, ndipopataidzidziswautsanana''*. Literally translated it means Cholera preparedness and response workshops were conducted during the 2008 cholera outbreak, we were trained during that period".

When probed on the meaning of disaster preparedness, the response was '*'cholera disaster preparedness entails activities meant to strengthen the capacity of the communities to prevent cholera for example health education, construction of toilets and hygienic practices*''.

The interviews revealed that there was lack of training for the communities and the health staff. Lack of training was a major impediment on emergency preparedness and response for communities. This had a negative knock on effect on the capacity of the institutions to handle emergencies.

4.1.7 Is there an emergency preparedness and response committee in you catchment area

Seventy percent of the respondents indicated that there were no preparedness and response committees in the area; thirty percent asserted that there used to be EPR committees during the 2008 cholera outbreak. Further probing revealed that the committees had been established during the cholera outbreak of 2008 and after the outbreak was contained, the committees died a natural death. This therefore meant that there was nothing happening in the community in terms of emergency preparedness.

4.1.8 What are the duties of the EPR committees

The question sought to find out the duties of the EPR committees. Thirty percent of the respondents alluded that the EPR committee had the responsibility of coordinating disaster preparation and response activities. Seventy percent said they did not know. The data suggested that the EPR committee was not implementing activities in the villages hence a huge percentage of the households were not aware of its functions.

4.1.9 How often do you meet with the EPR committee, when was the last meeting, (minutes available)

All respondents (100%) indicated that the EPR committee had never conducted meetings with the community. Some of the respondents said that the committee did not exist, if it did exist, then it was existing on paper only. One of the respondents said '*We don't even know who the members are. We have never seen the committee or heard about any meeting they have conducted in this area"*. This there for meant that the committee was no longer functional. There was need for the District Civil Protection Committee to revitalise the EPR committees.

4.1.10 Where you trained in Emergency preparedness and response

On the question that sought to find out whether the respondents were trained in EPR, hundred percent of the participants were not trained in emergency preparedness and response.

The data revealed that no capacity building trainings had been conducted for the committee and the community members.

One of the respondents said '' isisuzve emergency preparedness izvihatisatitakambozvidzidziswa. Zvimwevakuruvarikungozhakamaridzachodze training ikweyokumusoroikoko".

Literally translated it meant the communities had never been trained in emergency preparedness, the community members strongly believed that the responsible people had corruptly spent the money which was meant for the training. The data revealed that no trainings had taken place. The data also revealed the community had no trust with the people responsible for the trainings.

4.1.11 How many staff members at your health centre received the same training?

Hundred percent of the health workers interviewed indicated that they had not been trained in emergency preparedness and response. The data therefore revealed that the cadres who were supposed to be at the fore front of disaster preparedness were not empowered with the requisite skills to take care of that responsibility. One of the respondents said "*hatinakumbodzidziswaisunezve disaster management* ''. (We have never attended disaster preparedness training)

4.1.12 How many Village Health workers do you have for your area and are these adequate?

On the question which sought to find out the number of Village Health Workers (VHW) operating in the area, the data revealed that there were 20 trained Village Health Workers to cover 53 villages at Zibwowa and 12 trained out of 32 Villages in Chiredzana. The data suggested that the VHWs on the ground were a far cry from the required numbers. When the researcher further probed, the respondents revealed that the people were not keen to be trained as VHWs because of poor and erratic remuneration. The VHWs were not adequately remunerated hence they were demoralised causing some to voluntarily resign. This in a way negatively impacted on the key function of educating the communities on health related issues.

4.1.13 Do you have an EPR Plan for your catchment area?

On the question which sought to find out as to whether there were emergency plans in the area: hundred percent of the community respondents and key informants indicated that they were not aware of any emergency preparedness plan. A review of the clinic files showed that the health facilities had lastly developed emergency plans in 2014 and 2015 respectively.

4.1.14 Is your community vulnerable to cholera? Give reasons for your answer

On the question which sought to find out the opinions of the respondents on the vulnerability of the community to cholera, 70% of the household representatives interviewed said they were at risk, only 30% felt that they were not at risk. Those who said the community was at risk cited lack of toilets , open defecation, drinking untreated water from open sources and unhygienic practices such as failing to cover drinking water, failure to wash hands with water and soap after visiting the toilet as predisposing factors. Thirty percent felt that the community was safe from cholera , since a lot of people were now knowledgeable about how to handle food, how to treat drinking water drawn from open sources. One of the respondents said 'isu cholera *haichatibatenokutitavakuzivakudzivirira. huchapawavahushoma*' literally translated it means we are no longer at risk with cholera. We now know how to prevent the disease. Unhygienic practices are now on the decrease. Key informants and Village Health workers strongly felt that the community was vulnerable to cholera because sanitation coverage was very low. Most of the households were using bush latrine or substandard latrines. A significant number drew drinking water from unprotected water sources and there were (religious objectors) people from the apostolic sects who dissuaded family members from seeking health services at clinics. The data revealed that a large percentage of the households were vulnerable to cholera due to unhygienic practices and poor sanitation coverage. There was need for Ministry of Health and Child Care to aggressively promote health clubs as a strategy to spread health education and foster behaviour change.

4.1.15 What strategies are in place to mitigate/prevent cholera?

On the question which sought to find out the mitigation strategies for the health facilities and communities, hundred percent of the health staff interviewed pointed out that there was need to aggressively conduct health education at every village. Eighty percent of the household respondents gave the following strategies for mitigating against cholera: washing hands with soap or ashes after visiting the toilet, drinking water from protected water sources, using toilets for defecation, boiling drinking water and treating water with aqua tablets.

Twenty percent indicated that they did not know. The data revealed that many people in the community were aware of cholera mitigation strategies. Twenty percent had no knowledge on cholera mitigation. This therefore meant that this group was a high risk group. To counteract this challenge the health staff had to conduct health education sessions at the clinic and villages.

4.1.16Who are responsible for the implementation of these strategies?

The question sought to find out who was responsible for the implementation of the cholera mitigation strategies. All the health workers who were interviewed pointed out that it was their responsibility to ensure that communities got health education and aqua tablets. Sixty percent of the household respondents alluded that mitigation activities were supposed to be championed by the health workers. Forty percent said it was the responsibility of community leaders. This data revealed that a significant percentage of the population were not knowledgeable about the people who are responsible for the implementation of the cholera mitigation strategies. There was therefore a need to educate the communities on cholera mitigation structures.

4.1.17 Do you have any arrangements/room for isolation of suspected cases (observe how ideal)?

Both clinics (100%) said they create isolation rooms as and when there was need. The data revealed that the two clinics did not have designated rooms for isolation of suspected cholera cases.

4.1.18How often do the health workers report to the district office and by what means?

The question sought to find out how often the health workers reported to the district office. Hundred percent of the nurses interviewed said they sent to the district office weekly surveillance reports every Monday morning. Communication was being conducted through the phone. The nurses and EHTs compiled and sent monthly reports to the district office. Disease surveillance reports were also sent regularly to the district office. The data revealed that there was open communication between the district and the clinics. Both health facilities indicated that these communication methods worked very well. Prompt feedback was usually obtained from the District Office as and when necessary. The data revealed that the Ministry of Health and Child Care was able to monitor health services from the clinics on a weekly basis.

4.1.19 Do you analyse diseases statistics before sending to the district office?

All of the health workers interviewed (100%) affirmed that they analysed the reports before sending to the district. The analysis of data was done by the nurses and EHTs.

The data revealed that the analysis of the data enabled the health staff to identify trends of diseases and took corrective measures before an outbreak occurred.

4.1.20How often do you analyse diseases statistics

All the health workers interviewed (100%) reported that they analysed diseases statistics once per month. The health workers said it was mandatory that they compiled and analysed statistics at the end of every month.

4.1.21 In case of a cholera outbreak do you have a technical team in place to deal with the situation?

The question sought to find out whether the health facilities had a technical team to deal with cholera out breaks. Key informants (100%) from the health facilities affirmed that they had adequate technical personnel to deal with cholera outbreaks. Each of the clinics had three qualified nurses and two EHTs. The health staff asserted that they had clinical expertise to deal with cholera. The data there for suggested that the clinics had personnel on site to deal with emergencies in the form of nurses and EHTs.

4.1.22How do you report emergencies?

Hundred percent of the key informants said emergencies were communicated through phones, when network was down a nurse would be send to the district office to report the emergency. One of the nurses said ‘ *when we fail to get in touch with the District Nursing Officer through the phone , one of the health staff is send to the district office to report the emergency.* ’’. A nurse from one of the clinics studied had this to say ‘’ *network is a problem here; we have to go to high level places to connect. If we fail to connect we send one of the health staff to the nearest clinic where there are no challenges of connectivity’’*. The data revealed that the health staff could not rely on a single channel of communication there was need for MHCC to install radio systems to all health facilities. The radio system would act as a backup.

4.1.23 How do communities in your area report emergencies to the health facility?

Eighty percent of the interviewed households said when an outbreak occurred they would alert the Village health workers, who in turn would make an assessment and report to the health facilities. Twenty percent said they did not know who to communicate to. Twenty percent in an outbreak situation was a worrisome big number. The statistics showed that a significant number of community members were not aware of the communication channels. There was therefore need to raise awareness among community members on the proper communication procedures in cases of an emergency.

4.1.24 How long does it take to get assistance from the district office?

Hundred percent of the key informants said out breaks were treated as a serious matter in the Ministry of Health and Child Care, as such when an outbreak occurs, the Sister in charge or nurse on duty phones the District Nursing Officer (DNO), the DNO phones the District Medical Officer (DMO) who would communicate the outbreak to the Provincial Medical Director (PMD). The district office would within the same day urgently dash to the site for further investigations. One of the nurses said ‘*’ an emergency is not business as usual* ‘’. This therefore revealed that emergencies were swiftly responded to.

4.1.25 Do you have enough stocks to deal with cholera outbreak?

. The two health facilities studied confirmed that they had resources set aside to cater for emergencies. These resources are utilised whilst waiting for material and technical back up from the district office. The health centres reported that they had resources such as drugs, disinfectants to kick start response in case of a cholera outbreak. Drugs for diarrhoeal diseases (dysentery, typhoid and cholera), oral and intravenous rehydration solution and kits were also available. If there was need for transferring patients they had petty cash set aside from the Results Based Financing programme (RBF) subsidies, which they could use to hire local transporters. They could also call for an ambulance from Ndanga District hospital. The data revealed that the health facilities had contingent measures in place.

Figure 4.3: Emergency kit

4.1.26 Who is the focal person for emergency preparedness and response for this area?

Ninety five percent of the household respondents said that the focal point person was the Village Health Worker. Five percent said that they did not know. Hundred percent of the key informants asserted that the focal point person was the Environmental Health Technician. The data revealed that all the community members' interviewed were not aware of the focal point person. There was therefore need to educate the community that the focal point person was the EHT. This could be done through community meetings.

4.1.27 What is your opinion on emergency preparedness and response of this community, is the community prepared or not

The opinion of both key informants and household respondents (100%) was that Zaka Community was not prepared for any public health emergencies. Reasons given were: There were few Village Health Workers than villages that needed their services, most people did not have toilets, they were practicing open defecation, some people collected drinking water from unsafe sources, there were no community structures and resources at community level to deal with emergencies and communities were not well informed on health issues.

4.1.28 If the community is not prepared what do you think should be done to prepare the community for cholera outbreaks

Key informants (100%) pointed out that training on emergency preparedness and response for both health workers and community structures would improve the community's preparedness and response capacity. One of the EHTs said '' *community should not practice open defecation, instead should be encouraged to construct toilets.*

More Village Health Workers should be trained so that they cover all villages ''. The community felt that they should be supported with subsidies to construct toilets; health education sessions through Village Health Workers should be intensified, DDF should drill more boreholes. The data revealed that the communities and the health institutions were aware of what should be done to avert cholera disasters**.**

4.1.29 When a member of family falls ill what do you do?

Twenty one (45%) said they would immediately take the patient to clinic, twenty (43%) said if the patient is suffering from diarrhoea they would prepare salt and sugar solution before taking the patient to clinic. Five (11%) said they would take the patient to the church leaders. A respondent from an apostolic sect said "*Tinoendanemurwerekunoshandirwakumasowe''*. Literally translated it meant they would take the patient to the church leaders for prayers instead of taking him or her to the clinic. The response by the majority showed that the community had a good health seeking behaviour. However there was need to educate the religious objectors so that they sought for health services to avert disaster.

Table 4.1.6 Times when people report to the clinic when ill.

Time	**Responses**
Within 24 hours	21
Within 48 hours	15
Reports when serious	10

The Table 4.1.5 above showed time taken before reporting illness to the health centre:

Forty five percent of the respondents reported to the health centre within 24 hours of falling ill, thirty two percent reported within 48hrs, Twenty one percent said they rushed to the clinic when the condition worsened. The data therefore meant that there were a great number of people in the community who had poor health seeking behaviours. Some of the people went to the clinic when the situation had deteriorated, by so doing complicating issues.

4.1.30 In case a member of the family falls ill from cholera do you have resources set aside to take the patient to the Hospital?

Table 4.1.7 Availability of Emergency Fund

Emergency Fund Situation	**Number**
Have Funds set aside for emergency	0
Do not have any fund	21
Will borrow in time of emergency	15
Have contingency plan(can dispose household goods and livestock)	10

The question sought to find out as to whether community members have resources set aside to cater for costs that come with illnesses**.** Table 4.1.6 above revealed that none of the respondents had money set aside for emergencies, 21 (45%) did not have a plan, 15 (32%) said they would borrow and 10 (21%) said they would sell household goods and livestock in times of emergency. Some clearly indicated that lack of money was a major problem which would lead into those referred to hospital returning home instead of proceeding for further treatment at the hospital. The above data indicated that the majority of the people in the community were not prepared for sickness. Those who said they would borrow were as vulnerable as those who categorically stated that they had nothing set aside, because in the economic environment obtaining in Zimbabwe a large percentage of people did not have the capacity to lend some money. One of the respondents said '' *vaichimbokweretasamarihavachakwanisa.kumashureukukwaimbova ne vaiitazvechimbadzo''* literally translated it meant in the good olden days there were people who could lend people money, nowadays those people no longer have the capacity to do so.

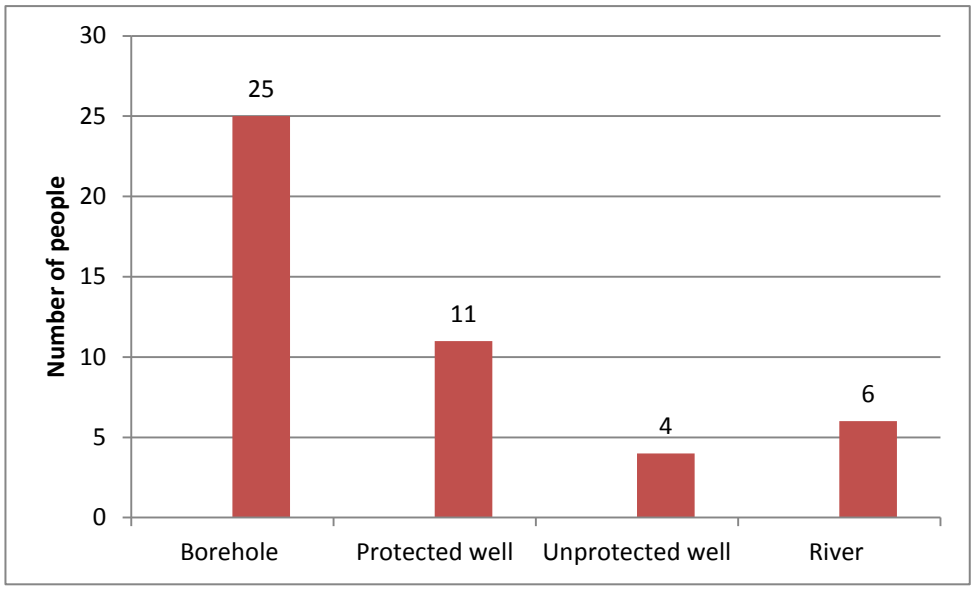


Figure 4.4 Sources of drinking water

4.1.31 Where do you get drinking water from?

Figure 4.4 above showed that 67.3 % of the homesteads collected drinking water from protected water sources, only 21.7 % collected from unprotected sources such as unprotected deep wells and from the river, 23 % of those who collected water from protected sources indicated that they sometimes collected drinking water from unprotected sources when their boreholes were broken down. The data revealed that chances of infection were quite high in the area due to a large percentage of people who fetched drinking water from unprotected sources.

4.1.32 if they are fetching water from unprotected sources, what are the reasons for drawing water from these sources?

The question sought to find out the reasons why some people sourced water from unprotected water sources. Twenty one percent of the respondents asserted that they collected drinking water from unprotected wells largely because of long down time when boreholes broke down and non-availability of boreholes in some of the areas.

One villager said '*when boreholes break down, the logistics of getting it repaired are cumber some. Sometimes we are left with no option than to draw water from the unprotected water sources''*. The drinking water from the unprotected sources was not being treated. One of the respondents said ' *Tinongomwazvakadero, mvurahainanánga"*.

Literally translated it meant they drank water from unprotected sources because they believed that all water was fit for drinking. .

Fig 4.5 A borehole

4.1.33How do you treat your drinking water?

The question sought to find out how the community treated drinking water drawn from unprotected water sources. Sixty two percent alluded that water was treated through boiling or use of aqua tablets , twenty eight percent said they could use water guard , ten percent said there was no need to treat drinking water. One of the respondents said '' *if you boil water it loses its natural taste, hence we drink straight from the river. Our fore fathers used to drink water from the rivers and there were no problems''.*

There was need to carry out health education sessions as a strategy to raise awareness. On a positive note 90% were aware that water should be treated through boiling or use of aqua tablets or water guard.

4.1.34How do you store your drinking water?

Sixty five percent stored drinking water in containers with lids whilst thirty five percent stored water in open buckets. The data revealed that there was need to educate people on the importance of using buckets with lids in order to prevent contamination of drinking water.

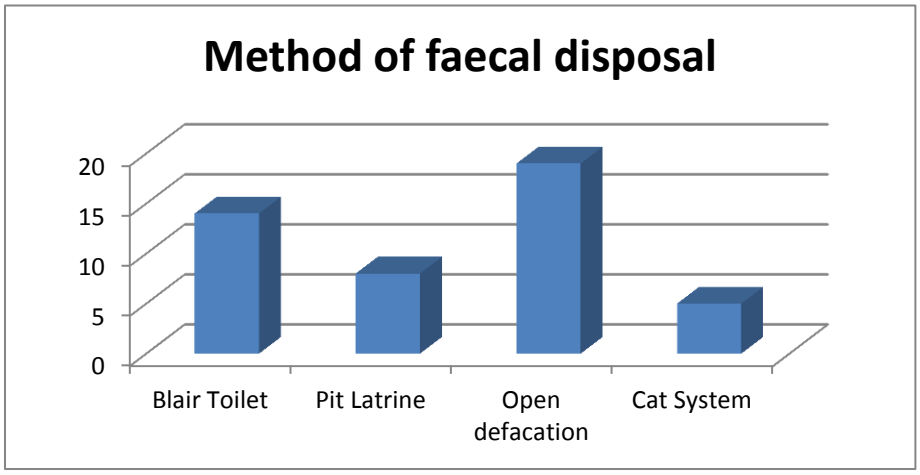


Fig 4.6 Method of faecal disposal

4.1.35 What type of toilet do you use at this household

As shown in fig 4.6 thirty percent of the homesteads used blair toilets, 17, 3% used pit latrines, 41, and 3% of the home steads used bush latrine (open defecation). Twenty one percent used the cat system. The data revealed that there was great need for health education to target the percentage of the population which used bush latrine.

Fig 4. 7 Open defecation and Blair toilet

4.1.36How do you often wash your hands?

All the homesteads visited none had hand washing facilities for washing hands after relieving oneself in the toilet, the two health centres had hand washing facilities.

Availability of hand washing materials was also checked, 90% had no soap or ash readily available for hand washing after using the toilet, 2.5% had soap and 1% was using ashes. The commonly used method of hand washing was run to waste using water only which had 52.5%, communal dish without soap 32.5%, communal dish with soap 5% whilst run to waste method with soap or ash were 1% only. Soap could not have been readily available due to lack of disposable money. The households could substitute soap by using ashes. The percentage of those using ashes was very low this could be as a result of poor behaviour change or doubting the efficacy of ashes.

Figure 4 .8: to the left was a tippy tap for hands washing: to the right was a bill board at a clinic with a message promoting hand washing

4.1.37At what critical times do you wash your hands?

The table below indicated the times of washing hands as reported by the respondents.

Table 4.1.8: Times of hand washing

Time of hand washing	Responses	Percentage
After using the toilet	20	43.4 %
Before eating	46	100%
Before handling food	23	50%
After changing child's diapers	14	30.4 %
After working in the fields	7	15.2 %
After eating	46	100 %
Before breast feeding or feeding the child	10	21.7 %

Hundred percent of the respondents reported that they washed their hands before eating and after eating. Forty three percent washed hands after visiting the toilet, 50 % before handling food. This data implied that the respondents appreciated the importance of hand washing. This was attributed to health education conducted by the village health workers and health staff at clinics.

4.1.38During gatherings such as weddings and funerals how do you handle food and drinking water?

Seventy percent indicated that they sometimes washed their hands at gatherings without using soap or ashes. Thirty percent said they used soap when washing hands at gatherings. All the respondents were aware of the food handling procedures such as using clean utensils, keeping drinking water in containers with lids and serving food whilst it's still warm and washing hands using the run to waste system. They all cited that sometimes because of the numbers of people involved at funerals and weddings it was difficult to adhere to recommended food handling procedures.

4.1.39 Have you ever received training on cholera?

Five percent of the respondents said they lastly received training on cholera in 2009/2010 during the cholera outbreak. Ninety five percent said they had not received any training on cholera. Sixty percent said they had received training on other health related issues at the clinic. The data revealed that trainings were only conducted during the last cholera outbreak after that no trainings had been conducted.

4.1.40 Topics covered during the training

The 5%, who reported that they had received training on cholera, covered the following topics: what is cholera?, causes of cholera, how to prevent cholera, how to prepare salt and sugar solution, hygienic practices, water and sanitation. The training was provided by nurses, Environmental health workers and village health workers. The data revealed that enough content was covered to ensure that the community was safe from cholera.

4.1.41What do you think will improve community preparedness on cholera outbreak

According to the Key informants health workers and communities (100%) communities should be trained on emergency preparedness and response. Simulation exercises should be periodically conducted to keep the community and health workers vigilant and alert. Deterrent measures should be taken to dissuade people from open defecation. NGOs should come in with Savings and lending schemes to empower the community so as to enable them to have resources to construct latrines. The Government and other players should weigh in with subsidies for the construction of toilets. Incentives should be mobilised for the Village Health workers so as to keep them motivated. The Ministry of Health and Child Care should train more VHWs. The health workers should train all villagers on cholera among other health conditions as a strategy to empower the communities with the requisite knowledge.

4.2 DISCUSSION OF THE RESEARCH FINDINGS

4.2.1 What is disaster preparedness and response?

Training is a critical component of disaster preparedness and response. The study revealed that 50% of the interviewed health staff were lastly trained in disaster preparedness 7 years ago the other 50% were not trained. Only 60% of the households were trained during the last cholera outbreak. Data revealed that the health staff and the community were not prepared for disaster. Disaster preparedness entails a series of activities that are meant to foster resilience The Zaka communities and the health staff should be given the requisite skills and knowledge as a way of building resilience. According to Kapucu (2006) training played a great role in controlling a devastating cholera outbreak in Haiti. The health staff were trained and in turn they trained the local communities. Knowledge is dynamic there is need to periodically train people. The health staff should be accorded opportunities to undergo refresher courses, to keep them up to date with developments in the area of disaster preparedness.

The findings are at variance with the study's theoretical framework (integrated disaster management model (Manitoba, 2002) which subscribes to the importance of continuously training communities and health workers. The study findings are also at variance with other scholarly work done by UN ISDR (2007) who attaches a lot of importance under training. They posit that training helps to build a culture of safety and resilience. The WHO emergency preparedness process also talks about the importance of training and education in disaster management.

4.2.2 How are stakeholders (government, NGOs and community) involved in the management of cholera outbreak?

The study revealed that during the cholera outbreak of 2008, there was a lot of stakeholder participation. Non-governmental organizations such as Action Faim, Care Zimbabwe, World Vision and Red Cross joined forces with the Government in the fight against cholera.

Some of the stakeholders contributed building materials, soap, buckets and oral rehydration sachets. The NGOs also facilitated health and hygiene training workshops. The success of responding to disasters and subsequent mitigation actions depend largely on the institutional arrangements available for that purpose. Multi stakeholder approaches are therefore encouraged whenever there is a disaster. In Zimbabwe, the Civil Protection Unit (CPU) has a mandate to rally every relevant government ministry and/or department whenever there is a disaster. This ensures that national, provincial and district disasters are approached from an Inter-Ministerial point of view. Other stakeholders, mainly non state actors are invited to join the various subcommittees that are set under the leadership of the CPU.

The study findings converges with the findings of a study conducted by Saywell et al. (1998) who posits that government departments may not be the best placed to provide the required technical support in an emergency situation. The roping in of civil society organizations brings in the much needed capacities to deal with the problem at hand.

The Civil Protection Committee policy cited under the literature review empowers the civil society to assist the Government and communities during emergencies. This was also demonstrated in the last Haiti cholera outbreak. According to Kapucu (2006) the Government of Haiti had no capacity to control the outbreak, other players such as government of America had to weigh in with human, financial and material resources.

Zimbabwe just like Haiti is a poor country which cannot contain a huge disaster with its own resources unlike developed countries such as Britain and Canada. Bloom *et al*, (2006) concurs when he asserts that developed countries like UK and Canada have adequate resources and infrastructure to fight and reduce the impact of epidemics. Developing countries such as Zimbabwe, in times of out breaks have to engage NGOs and the private sector to carry out certain tasks, provided the terms of reference for each assignment are clearly spelt out and agreed upon. Howard (1996) avers that government remains overall accountable and answerable to its people even in cases where NGOs and the private sector are contracted to perform certain roles. The MHCC records that were reviewed by the researcher revealed that During the 2008/9 cholera outbreak in Zimbabwe, there was a realization that response strategies by the various agencies needed to be coordinated. In this case, the Cholera Control and Command Centre (C4) was created (WHO, 2009:) as a national coordination mechanism, mainly for the government and international humanitarian agencies.

4.2.3 What is the behaviour and practice of the community regarding health and hygiene?

The results of this study are in line with previous studies conducted by UNICEF (2010) who identified the major causes of cholera out breaks as people drinking water from unprotected water sources and open defecation. The access to sanitation in Zimbabwe is a big challenge, especially now considering that the country has been in a humanitarian and economic crisis for more than a decade (Martin, 2008). The United Nations Children's Fund (UNICEF) reported that more than half of the population had no access to improved sanitation facilities and at least a quarter of the population had no access to sanitation facilities (UNICEF, 2010). With this very low coverage of sanitation, communities had to find alternative means like open defecation, which is common in rural areas of the country? The findings from the UNICEF study converges with the findings of this study . The NewZim Situation (2010), in their study also found out that Zimbabwe was rated as one of the countries with the highest open defecation rate in the world by a World Bank expert. Open defecation includes all those people who use the bush, which is a common practice in rural areas of less developed countries like Zimbabwe, yet the bacteria can survive in human waste for a long period and then be transmitted by flies.

What this implies is that once the rainy season starts, human waste is washed into rivers by runoff and also into underground water through seepage, contributing to water contamination. During the Haiti cholera outbreak an investigation by the Government investigation team revealed that many patients had drank untreated river water before they became ill, and few had defecated in a latrine. According to Qadri (2005) a study conducted in Nigeria revealed that most of the Northern states of Nigeria rely on hand dug wells and contaminated ponds as source of drinking water. Usually, the source of the contamination is other cholera patients when their untreated diarrhoea discharge is allowed to get into water supplies. .

Transmission within a group of people

Cholera outbreaks usually occur where there are larger gatherings of people. This is so because water and sanitation facilities are usually stretched and compromised. The study revealed that the respondents were aware of the hygienic practices which should be adhered to at large gatherings such as weddings and funerals. However the large numbers involved compromised hygiene. Washing of hands was only done with water and without soap, drinking water was usually not properly stored because of inadequacy of storage facilities needed to store water, toilets not properly used, and food handling was also not properly done. Such practices predisposed the community to cholera. The findings of the study agree with the findings of Reese and Douglas (1986) who reported an association of the outbreaks with the annual Hadj to Mecca. Other festivals and pilgrims that have been linked to the outbreak of the disease are those taking place periodically in India, Saudi Arabia and Egypt. Similar outbreaks have also been reported in Zimbabwe when large religious conventions take place. These include the Johanne Marange Apostolic sect that gathers for religious purposes at Marange in Manicaland province. There are usually poor hygienic practices at these gatherings. Barua in Christie (1987) reported the link between cholera and large gatherings such as funerals and weddings. In Zimbabwe, culturally people shake hands at funerals as a gesture of mourning with the bereaved. That is why the Ministry of Health and Child Welfare and its partners in the health sector discouraged hand shaking at funerals as part of the campaign strategies to reduce spreading of cholera during epidemics.

4.2.4 How can stakeholders improve community preparedness and response to emergencies?

The study revealed that there is very little health and hygiene education taking place in the communities, this is further compounded by poor water and sanitation system. The findings are at variance with studies cited under literature review section. A similar study conducted by Kapucu (2006) in Haiti pointed out that health education played a great role in the fight against cholera in Haiti. Whereas this study revealed that there were no disaster preparedness trainings in the Zaka communities. The theoretical frame work for this study had training and education has one of the corner stones of disaster preparedness. The Hyogo framework and the WHO disaster management frame work ascribe to the importance of training and educating health workers and communities in disaster preparedness and response. The civil society and government should aggressively conduct health education. Stakeholders such as Civil Protection Unit, MHCC and NGOs should play a significant role in building the capacity of the communities through trainings as a strategy to bring about positive behaviour change. Often communities have limited understanding of the connection between poor sanitation and poor health due to lack of appropriate education and awareness. As such, public health education should be carried out as one of the strategies for preventing the spread of cholera. This is supported by the WHO disaster preparedness frame work, which has training and education has one of the pillars of disaster preparedness.According to Smith (1999) Public health education should not be simply to distribute information, education and communication materials and pass messages, but should be a well-planned action-oriented task that even challenges certain beliefs. For instance, communities should be educated on how best to dispose solid waste, especially faeces since they are the main sources of the cholera bacteria.

The study found out that the clinics had no isolation rooms to cater for cholera suspected cases. The issue of infrastructural development was a major challenge for most of the government departments; this was as a result of the declining economy. Whereas developed countries like UK and Canada have adequate resources and infrastructure to fight and reduce the impact of epidemics (Bloom *et al*, 2006). Stakeholders should come in and assist the clinics to construct isolation rooms.

Since the Ministry of Health is suffering from the blunt of the macro economic environment obtaining in the country, stakeholders should chip in with cholera kits: drugs, oral and intravenous rehydration, disinfectants and protective clothing. There was need for the Ministry of Health and Child Care to periodically monitor the preparedness of the health facilities.

The study revealed that the communities had serious challenges of water and sanitation infrastructure. The MHCC revealed that the 2008 cholera outbreak was exacerbated by poor sanitation and lack of clean drinking water. The cholera out breaks which have occurred in Nigeria have also been as a result of lack of clean drinking water and open defecation. According to a study conducted by Qdri (2005) Most of the Northern states of Nigeria rely on hand dug wells and contaminated ponds as source of drinking water. Usually, the source of the contamination is other cholera patients when their untreated diarrhoea discharge is allowed to get into water supplies. The government of Zimbabwe through MHCC and CPU should develop cheap toilet models. The cheap models should be aggressively marketed. NGOs should develop the income, savings and lending scheme in the Zaka community (ISAL). Through the ISAL concept the communities would be able to raise income which can be used to construct toilets and repair boreholes when they have broken down. ISALs can assist the communities to generate wealth; this would help to address the cancerous dependence syndrome. Where by a grown up man with a family will stand akimbo and wait for another man to build a toilet for him. The Government with the assistance of NGOs should resuscitate health clubs.

The health clubs can be used to promote the diffusion of good health practices. Stakeholders can sponsor hygiene competitions. The Government should encourage local leaders to enact some buy laws which can be used to dissuade open defecation. The government should recruit and train more Village Health Workers. These cadres are the unsung heroes of the Zimbabwe health delivery system. They play a great role in disease surveillance at community level and educating the communities on good hygienic practices. Olu e tal (2006) allude to the fact that the shortage of VHWs was a contributing factor in the 2008 cholera outbreak, communities lacked health education on health and hygiene.

Village Health Workers act as a link between the Health centre and the community, she/he also conduct community disease surveillance.

According to Narayan (1999) people are more likely to take action from the information they receive through their social network, hence the need to create presence of VHWs in the community who will provide health education. This notion is supported by World Health Organization (2010) when they assert that community participation is the corner stone for emergency preparedness and response. Oakely (1989) cited by MOHCC in the VHW strategic direction assert that participation would increase community involvement in decision making and implementation, these communities would have control over their health. NGOs should come in with incentives for the VHWs. To enable the VHWs to cover all the corners of the community, bicycles should be provided.

The government through District Development Fund (DDF) should facilitate the training of the Village Pump Mechanics who will take care of the boreholes instead of waiting for a DDF mechanics from the district to come and repair the boreholes. The study revealed that the EPR committees are no longer functional. The committees only functioned during the 2008 cholera outbreak. There is need for the selection of new committee members. The committees should be trained and motivated to engage the communities. The EPR committees should help the communities to develop EPR plans. CPU and the MHCC should supervise the implementation of the EPR plans. Oakley (1989) asserts that communities should actively participate in decision making and health facilities developmental programmes and disease control programmes. WHO (2010) propound that for any meaningful disaster preparedness, the communities should be involved. The theoretical frame work talked about the importance of putting in place structural and non-structural facilities. The theoretical framework also talked of the importance of resource mobilization. The study revealed that the issue of resources is the greatest Achilles heel in the disaster prevention endeavours in the communities.

4.3 Summary

This chapter presented, analysed and discussed data obtained from the questionnaires, interviews and document analysis. The data was interpreted, analysed and discussed linking and comparing them with other studies highlighted in chapter 2 under the review of related literature.

The findings were presented and discussed in line with the research questions using descriptive statistics. However the study findings showed that the Zaka community is not prepared for a cholera outbreak. The next chapter looked at the research summary, conclusion and recommendations for further study.

CHAPTER FIVE: SUMMARY; CONCLUSIONS AND RECOMMENDETIONS

5.0 Introduction

This chapter is a follow up to the preceding chapter in that it concludes the discussion of the results and eventually gives recommendations on how to improve emergency preparedness and response capacity of rural communities in Zaka. The previous chapter looked at data presentation, analysis, and discussion of research findings. This chapter summarized the whole research, linking the major findings to the research questions of the study. It also gives a conclusion and recommendations that are meant to benefit the stakeholder that is Government, MHCC and RDC. The major findings, conclusion and recommendations for further studies were also given.

5.1 Summary

The study sought to investigate the preparedness of the Zaka Communities to cholera out breaks. The research used a descriptive survey. This chapter looked at the problem and its setting, background information on preparedness and response to cholera outbreaks, statement of the problem which was followed by a review of literature. The research was guided by 4 questions namely: what is cholera disaster preparedness and response, how are stakeholders involved in the management of cholera, what is the behaviour and practice of the community regarding health and hygiene and how stakeholders can improve community preparedness and response to emergencies. Chapter two looked at the review of related literature. A comprehensive research was done on cholera preparedness and response at international, regional and local level. Chapter 3 looked at research methodology. A descriptive research design was used. Questionnaires and interview guide were used as data collecting tools in this study. Population and sample size were described in this study. The target was 2000 and a study sample of 46, comprising of 31 females and 15 males. The research used purposive and random sampling techniques. Questionnaires were administered to 46 respondents and the researcher interviewed EHTs, nurses and household respondents. The researcher conducted a pilot study to test validity and reliability of instruments. Ethical considerations were observed by the researcher. The researcher sought permission from MHCC to conduct the study. A verbal consent was sought from the participants before the administration of questionnaires and interviews.

5.2 Major findings

The major findings of the study were that the Zaka community was not prepared for cholera disaster. The factors were as follows:

- There were few Village Health Workers than villages that needed their services.
- Most people did not have toilets, they practised open defecation.
- Some people collected water from unsafe sources.
- There were no community structures and resources to deal with emergencies.
- The majority of the community members and some of the health workers were not trained in disaster management
- The community lacked health education on health and good hygienic practices

5.3 Conclusion

The Zaka rural community lacked capacity in emergency preparedness and response, health workers and communities were not trained in emergency preparedness and response, which had resulted in none establishment of structures responsible for emergency preparedness and response planning. There were no emergency plans in the communities. This study also concluded that there were structures such as the Health Centre Committees in the community which can be capacitated in emergency preparedness and response. There were no local resources set aside for emergencies, the Zaka communities still looked up to the Government for subsidies for implementing mitigation activities against public health emergencies, the lack of sanitary facilities, hand washing facilities and soap for hand washing, deterioration in hand washing practice of run to waste using soap and high open defecation were a major concern as this placed communities at risk to diarrhoeal diseases. Action must be taken to address these concerns. Lack of emergency fund at both community and household level clearly indicated how the Zaka communities were not prepared for emergencies.

Lack of training in emergency preparedness and response was a major stumbling block in building capacity of Zaka communities to respond to outbreaks, it was not only affecting staff but also the community. The World Health Organization (1999) states that lack of preparedness would strain health services and at end hinder development through deaths and disease.

5.4 Recommendations

The following recommendations were made to the following stakeholders

5.2.1 The Government of Zimbabwe

- The Government should enact some policies to fight open defecation
- The CPU should be equipped with material, human and financial resources so as to enable the department to fully fulfil its mandate

5.2.2 MHCC

- Environmental health Technicians should train communities how to construct a simple hand washing facility, the tip tap and use of ashes when there is no soap when washing hands.
- Village Health Workers should be empowered to play an important role in ensuring that health practices are implemented in the communities.
- The community should be made aware of disease trends through meetings with the health Centre committee
- Sanitation focus Participatory Health and Hygiene Education should be implemented, with the community being trained on how to construct toilets using minimum cement and locally available materials (cobbled pit), adoption of the upgradable blair ventilated pit latrine and putting this into effect is highly recommended
- MOHCC should source funds through the WHO or other Health Partners for training staff on emergency preparedness and response. In house staff meetings can be used to train staff on emergency preparedness. The health staff should train VHWs and the community
- Health education on health and hygiene must be intensified, especially importance of hand washing, use of toilet and importance of salt and sugar solution.

5.4.3 Community

- Participatory community monitoring teams should be established , to oversee the construction of toilets in the community
- Establishment of community emergency preparedness and response committees is very essential; this committee should exist at both ward and Village level as sub-committee to already existing committees the Ward Development Committee and the Village development committee respectively.

5.4.4 Civil Protection Unit

- Emergency plans are very important, an all-hazards emergency preparedness and response plan must be made with the involvement of community members, to strengthen community ownership of the programme.
- An emergency fund should be at community level to assist in emergencies that is at ward and Village levels, households should also be encouraged to have they own emergency fund at household level and a contingency plan.
- The Emergency preparedness committees should periodically hold meetings with communities to evaluate progress in implementing strategies for mitigating emergencies.
- Monitoring visits from the district would also strengthen the committees.
- The committee should also monitor distribution and use of resources.

5.5 Areas for further study

In this study it was noted that most of the households headed by an illiterate head did not have toilets. There was need to investigate whether there was a link between literacy and hygienic practices.

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APPENDIX 1: CONSENT FORM

Cholera emergencies preparedness and response capacity of rural communities *of Zaka*

Researcher : Chigogora Percy Victor

Phone number: 0773354603

Introduction

My Name is Percy Victor Chigogora studying for Master's in Adult Education at the Midlands State University conducting a study on Cholera emergencies preparedness and response capacity of rural communities in Zaka District.

What you should know about this research study:

- We give you this consent so that you may read about the purpose, risks, and benefits of this research study.
- The main goal of research studies is to gain knowledge that may help your community in preparing for public health emergencies.
- We cannot promise that this research will benefit you directly.
- You have the right to refuse to take part, or agree to take part now and change your mind later.
- Whatever you decide, it will not affect your regular care.
- Please review this consent form carefully. Ask any questions before you make a decision.
- Your participation is voluntary.

Purpose

The main objective of the study is to conduct an assessment on the state of preparedness for public health emergencies and capacity of this community to respond to emergencies. The following are the specific objectives of the study:

- To assess the state of preparedness of local health institutions to epidemics.
- To identify community structures responsible for emergencies and their capacity to respond to epidemics.
- To identify roles and responsibilities of the community in emergency preparedness and response.
- To assess what resource the community have for preparation and responding to emergencies
- To assess the level of coordination between the health centres and community structures for the purpose of responding to emergencies.

- To come up with recommendations for an ideal community based preparedness and response strategy for public health emergencies.

Results of this study will be submitted to Zaka Rural District Council and Ministry of Health to formulate strategies for emergency preparedness and response in district, this would help communities to prepare for public health emergencies. By providing me with information I require will also assist me in attaining my Masters in Adult Education.

Procedures and duration

If you decide to participate, I will ask you questions whilst recording on the questionnaire, this will take about 45 minutes of your time, I may also like you to show me records and structures at your homestead or institution.

Risks and discomforts

There are no tests in this study so feel comfortable

Benefits and/or compensation

This study does not have immediate benefits to you, but will assist formulating strategies for your community in preparing for public health emergencies,

Confidentiality

If you indicate your willingness to participate in this study by signing this document, we plan to disclose the results of the study to Zaka Rural District Council (Social Services Department Head) and Ministry of Health and Child Care (District Medical Officer), Study dissertation will be submitted to the Midlands State University Department of Adult Education of which a copy can be kept in the library. Any information that is obtained in connection with this study that can be identified with you will remain confidential and will be disclosed only with your permission. No names will be used in the report.

Voluntary participation

Participation in this study is voluntary. If you decide not to participate in this study, your decision will not affect your future relations with your health institute. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty.

SIGNATURE PAGE

Cholera emergency preparedness and response capacity of rural communities of Zaka.

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

Authorization

You are making a decision whether or not to participate in this study. Your signature indicates that you have read and understood the information provided above, have had all your questions answered, and have decided to participate.

_____ _____

Name of Research Participant (please print) Date

_____ _____

Signature of Participant or legally authorized representative Time

_____

Relationship to the Participant

_____ _____

Name of Researcher/ Assistant Obtaining Consent Signature

Date

_____ _____

_____

Name of Witness (*if required)* Signature Date

YOU WILL BE OFFERED A COPY OF THIS CONSENT FORM TO KEEP.

If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research participant or research-related injuries; or if you feel that you have been treated unfairly and would like to talk to someone other than a member of the research team, please feel free to contact the Zaka District Medical Officer on 0776014080

APPENDIX 5

Questionnaire No_____

Good morning/ Afternoon. 1 am kindly requesting you to spare time to respond to this questionnaire. Your open feedback will be greatly appreciated. My name is Percy Victor Chigogora a Master of Adult Education Student at Midlands State University. I am carrying out an investigation into the state of preparedness and response capacities of the Zaka communities to cholera outbreaks. Kindly be assured that all answers and information provided shall be kept strictly confidential.

SECTION A

Demographic Information

1. Age……
2. Gender…….
3. Position…….
4. Marital Status…….
5. Experience……
6. Religion …….
7. Educational qualifications……..

SECTION B

8. What is you understanding of the term disaster management and preparedness

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9. Is there an emergency preparedness and response committee in you catchment area

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10. Who are the members of the emergency preparedness and response committee

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11. What are the duties of the EPR committee

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12. Where you trained in Emergency preparedness and response/IDSR

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13. If yes when , where, when and place trained

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14. How many staff members at your health centre received the same training?

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15. How many Village Health workers do you have for your area and are these adequate?

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16. Do you have an EPR Plan for your catchment area?

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17. When was it last reviewed?

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……..

18. Does your plan feed into a district or other level EPR plans ?

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19. Is there an emergency preparedness and response committee in your catchment area?

Yes No

20. If Yes, Who are the members of the EPR Committee?

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21. If Yes, what are the duties of the EPR committee

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22. Were community members trained in EPR and How many, when

Yes When: How many trained:

No

23. How often do you meet with the EPR committee, when was the last meeting, (minutes available)?.....

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24. What is the role of the community in EPR?

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25. Is your community vulnerable to cholera? Give reasons for your answer

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26. What strategies are in place to mitigate/prevent cholera

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27 Who are responsible for the implementation of these strategies?

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27. Do you have any arrangements/room for isolation of suspected cases (observe how ideal)?

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28. How often do you report to the district office and by what means?

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29. Do you analyse diseases statistics before sendingto the district office?

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30 . If not why

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30. How often do you analyse diseases statistics

?.....

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31. In case of a cholera outbreak do you have a technical team in place to deal with the situation?

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32. Who are in this team?

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33. How do you report emergencies ?

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34. How do communities in your area report emergencies to the health facility?

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35. How long does it take to get assistance from the district office?

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36. Do you have enough stocks to deal with cholera out break ?

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37. Who is the focal person for emergency preparedness and response for this area?

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38. What is your opinion on emergency preparedness and response of this community, is the community prepared or not, what should be done to improve EPR and who should do it.

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39. If the community is not prepared what do you think should be done to prepare the community for cholera outbreaks

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Date_____ **Signature of Interviewer_____**

APPENDIX 6

Questionnaire No_____

HOUSE HOLD RESPONDENT QUESTIONNAIRES

Good morning/ Afternoon. 1 am kindly requesting you to spare time to respond to this questionnaire. Your open feedback will be greatly appreciated. My name is Percy Victor Chigogora a Master of Adult Education Student at Midlands State University. I am carrying out an investigation into the state of preparedness and response capacities of the Zaka communities to cholera outbreaks. Kindly be assured that all answers and information provided shall be kept strictly confidential.

SECTION A

Demographic information

1. Age…….
2. Sex…….
3. Marital Status …….
4. Educational qualification……
5. What is your religion…….
6. Village Name …….
7. Ward No.**……**

1. Is your household vulnerable to cholera

Yes		No	

2. What measures have you put in place to protect and mitigate your family from cholera?

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When a member of family falls ill what do you do?

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3. In case a member of the family falls ill from cholera do you have resources set aside to take the patient to the Hospital?

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.....

4. When your family member fall sick from diarrhoea what do you do ?

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5. When do you take the above action/go to the health centre

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6. Where do you get drinking water from?

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7. if they are fetching water from unprotected sources, what are the reasons for drawing water from these sources?

8. How do you treat your drinking water?

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9. How do you store your drinking water?

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10. What type of toilet do you use at this household***?***

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11. How do you often wash your hands***?***

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12. At what critical times do you wash your hands?

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14. during gatherings such as weddings and funerals how do you handle food and drinking water?

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13. Have you ever received training on cholera?

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14. When was the last time you received the training on cholera ?

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15. Who provided the training and which topics were covered?

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16. What do you think will improve community preparedness on cholera outbreak?

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Date_____ Signature of Interviewer_____

APPENDIX 7

FOCUS GROUP DISCUSSION GUIDE

Cholera emergency preparedness and response capacity of the rural communities in Zaka district.

1. what are your roles and responsibilities regarding health issues in this community

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2. Is there a committee responsible for emergency preparedness and response, and where you trained on Emergency Preparedness and Response (when)?

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3. What is your role as a community in Emergency Preparedness and Response? (before, during and after emergency)

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   …….

4. Is your community vulnerable to cholera outbreaks (give reasons)

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5. What resources do you have as community for Emergency Preparedness and Response / who manages these resources.

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   ……..

6. What strategies is the community employing to mitigate and prevent outbreak of cholera.

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7. What is your relationship (community) with the health institution regarding emergency preparedness and response

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   …….

8. Is this community prepared for cholera outbreak: give reasons

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   …….

9. What do you think should be done to improve the capacity of this community to prepare and respond to cholera outbreaks

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Date_____ **Signature of Facilitator_____**

APPENDIX 8

INSTITUTIONAL QUESTIONNAIRE

SECTION A

Demographic Information

1 Age…….

2 Gender……

3 Position…….

4 Experience……..

5 Marital Status……..……...…….

6. Educational qualifications……

40. Religion……..

SECTION B

1. What is your understanding of the term disaster management….....
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2. Who are the stakeholders involved in disaster management in Zaka district……
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   …….

3. How are the activities of the stakeholders impacting disaster preparedness and response……
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4. Is cholera a problematic disease in the district?.....
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5. Is there a District Civil Protection Committee in the district ?.....
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6. If the answer is yes was the committee trained in disaster management?.....
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7. If the answer is no. why was the committee not trained

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7. If the committee was trained when last was it trained in disaster management
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……..
8. What is the role of the District Civil Protection Committee in managing disasters such as cholera out breaks
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9. Are there any cholera out breaks preparedness mechanisms in the district?.....
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10. Is the CPU effective in responding to cholera and other disasters
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11. If the answer is no, what can be done to improve disaster preparedness……
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12. If the answer is yes: what are the strategies being used
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