

Community-Based Emergency Management: A Case Study on a Cholera Outbreak in Zimbabwe

Chiyangwa Tendai Mukuruva

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Attestation of Authorship

“I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.”

Signature

Date.....

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Abstract

Emergency management has been influenced by top-down approaches that prioritise the need for technocratic expertise and resource base in addressing acute situations. However of key importance in the processes of emergency management is the participation of affected communities, especially poor communities as these are most likely to experience severe adverse effects. In cholera outbreaks, responses to managing outbreaks have tended to be reactive rather than proactive, with a limited role for community participation, that is, some involvement in health education programmes. However community participation goes beyond “involvement” in programmes and requires active leadership to empower people to participate in emergency planning.

A qualitative research study was conducted in Gadzema, a cholera-affected area in Chinhoyi town, Zimbabwe. This study draws on the community’s and local emergency actors’ perceptions about Cholera and the outbreak management in 2008. Utilising focus groups and key informant interviews, perceptions were analysed in relation to the literature on emergency management and the ladder of community participation framework. Although the findings suggest that the community was involved in the response to the outbreak through community health education campaigns and being recruited as community health volunteers, there is still more scope to enhance community participation in planning for future outbreaks. Through developing strategic steps to encourage community participation, social determinants of health can be identified and used to inform policy development to redress the underlying health problems in Chinhoyi.

Chapter 1: Introduction

1.1 Purpose and Background to Thesis

Disasters come in various forms, ranging from natural to human-made, affecting communities in different ways. Invariably communities suffer the consequences of the disasters which often leave some unable to cope or recover from the aftermath especially the poor (Ursano et al., 2007). In 2005, an estimated 162 million people worldwide were affected by disasters, i.e. natural disasters, epidemics, industrial and other accidents (Ursano et al., 2007), leaving 105 000 dead and damages totaling over \$106 million World Health Organization, (2006). Today's disasters stem from a complex mix of factors including routine climate change, global warming influenced by human behaviour, socioeconomic factors and inadequate disaster preparedness and education which cause poorer people to live in risky circumstances (Braine, 2006). Preparedness for disasters of any nature becomes a critical aspect for communities to 'bounce back', a term used by Ronan and Johnston (2005) to refer to as the ability to prepare for, respond to, and cope with a disaster or any adverse event, otherwise known as resilience.

In order to investigate the concept of community participation in emergency management, this thesis presents a case study in Zimbabwe, focusing on a Cholera outbreak which occurred in 2008 in the town of Chinhoyi. To contextualise this study it is useful to present some background on the key elements in the emergency: the country of Zimbabwe and cholera.

Zimbabwe is a landlocked country located in Southern Africa with a population estimated to be 12.5 million (WHO, 2011). The country is divided into 10 administrative provinces and 62 districts. It has two main tribes, the Shona and Ndebele and various other ethnic groups which comprise 10% of the population. In 1980, Zimbabwe (formerly Rhodesia) gained its independence from British rule and, at that time, had a well-developed infrastructure and financial system (Foreign and Commonwealth office, 2011). Currently the country is led by an inclusive government with the two former opposition parties in power : the Zimbabwe African Union-Patriotic Front (ZANU-PF) led by Robert Mugabe and the Movement for Democratic Change (MDC), led by Morgan Tsvangirai. Agriculture, mining and tourism form the backbone of the country's economy (Robertson, 2003). Natural disasters, particularly flooding and drought, impact directly on rural communities (Gwimbi, 2009).

Over the past decade, the country has experienced an economic meltdown which saw its average life expectancy drop from 61 years to 37 years for men and 34 years for women (Meldrum, 2008). Its economic decline was marked by hyperinflation (Hanke, 2008) which, in early June of 2008, stood at 2.5 million per cent per year and causing living standards to drop by 38 per cent. Political tensions led to the virtual collapse of its health services resulting in a lack of health workers, essential drugs and a deteriorating water and sanitation infrastructure. This led to a cholera outbreak in late 2008 (Merlin, 2009). The transfer of responsibility for water supply and sewage disposal from City Councils to the Zimbabwe National Water Authority (ZINWA) was closely linked to the outbreak which left big cities such as Harare and Chitungwiza without running water for more than two years (Mason, 2009). People became dependent on shallow wells which readily became contaminated because of the lack of sewage disposal. The lack of access to clean water and the deterioration of sanitary services around the country contributed to the major cholera outbreak which claimed at least 4,282 deaths and a total of 98 522 cases by June 2009 (Pruyt, 2009). Zimbabwe's health-care system, once held up as a model for Africa, was collapsing.

Cholera is an acute diarrhoeal disease caused by a bacteria called *Vibrio cholerae*. It is often described as a classic waterborne disease because of its close association with water but it can also be transmitted through contaminated food (Sack, Sack, Nair, & Siddique, 2004). In developed countries, contaminated food (especially undercooked seafood) is the usual vehicle for transmission, and contaminated water is more common in less developed countries (Sack et al., 2004). Typical symptoms include the sudden onset of profuse, effortless, watery diarrhoea followed by vomiting, rapid dehydration, muscle cramps and suppression of urine (Park, 2005). Its short incubation period of two hours to five days enhances its potential for explosive outbreaks (WHO, 2011). The mainstay of therapy for cholera patients is rehydration with oral rehydration salt solution (ORS) or intravenous Ringer's lactate solution depending upon the degree of dehydration (Bhattacharya, 2003). Other typical at-risk areas include peri-urban slums where basic infrastructure is not available, and camps for internally displaced people or refugees, where the minimum requirements of clean water and sanitation are not met (Swerdlow & Isaäcson, 1994).

A multidisciplinary approach based on prevention, preparedness and response, along with an efficient surveillance system, is the key in mitigating cholera outbreaks, controlling cholera in endemic areas and reducing deaths (WHO, 2011). In most

industrialised countries, cholera was largely eliminated by water and sewage treatment over a century ago. Today it remains a significant cause of morbidity and mortality in developing countries, where it is a marker for inadequate drinking water and sanitation infrastructure (Gaffga, Tauxe, & Mintz, 2007)

Towards the end of 2008, an outbreak hit my local town, Chinhoyi, where I had served as an Environmental Health Officer for two years. It was an experience that was overwhelmingly demanding as a series of events unfolded and spared little time to prepare. It was an eye-opening experience to manage an outbreak, despite the devastating mortality rate. It was my first emergency since my career began. This experience drove my desire to focus on emergency preparedness. It had become clear that emergency preparedness was an area that required more attention to improve a community's capacity to handle a disaster and utilise available resources and networks essential to build community resilience (Murphy, 2007).

Emergency management is the discipline of dealing with risk and risk avoidance (Haddow, Bullock, & Coppola, 2007) and is usually a government's responsibility. However the field and profession has evolved from the classic top-down bureaucratic model to become a more dynamic and flexible network model that facilitates multiorganisational, intergovernmental, and intersectoral cooperation (Waugh & Streib, 2006). It is essential to include the community which is often at the centre of immediate response and recovery activities. Without the involvement and commitment of communities, emergency preparedness becomes fragmented, inefficient, and poorly coordinated (WHO, 1999). The main objective for this thesis is to address the need for local communities to plan holistically with local authorities for adverse events in a way that yields effective responses: saving lives, minimizing damage to property, and allowing communities to recover both physically as well as psychosocially (Ronan & Johnston, 2005).

This qualitative case study closely explored perceptions from community members in Gadzema, a low socioeconomic urban area in Chinhoyi. It is within this area where the index case was reported for the town in August 2008 and it also offers a typical exposition for cholera's dynamics in a community. Perceptions of community members and the emergency actors were collected and were important to inform future emergency management strategies (Renn, 2010). The research also explored the various

factors contributing to the cause and spread of the disease in the same town through an analysis of data collected which provided lessons to improve on preparedness.

1.2 Theoretical Frameworks

Emergency preparedness has traditionally been perceived as the exclusive domain of one organisation, sector, or level of society and government and community engagement in emergency planning was kept rather subtly at bay. However the WHO (1999) stresses that it is at the community level where the full effects of emergencies are felt that definitive achievements in emergency preparedness can be made. The tendencies to manage emergencies have been shaped by ideologies and assumptions on emergency management which I will discuss briefly.

The dominant model in emergency management had its roots in military analogies (Dynes, 1994), which viewed emergencies as extensions of *enemy attack* scenarios. Emergencies were viewed as conditions of social chaos which could be rectified by command and control. The model summed up a *top-down* approach in managing emergencies which often sidelined community participation as communities were assumed to be ill-resourced and lack the capacity to manage disasters or emergencies effectively. This notion, as Dynes and Quarantelli (1981) note, has been deeply embedded in the civilian organisations which deal with emergencies.

Over the years, emergency management shifted from the model based on military assumptions (Quarantelli, 1988) to one which managed emergencies holistically. This model has an inclusionary aspect allowing community to participate and take a role in the planning and decision-making processes based on a collaborative *bottom up* approach. However, Handmer and Dovers (2007), noted that with the model of inclusion, there may be a broad split between participation that is demanded from the *bottom up* (community insistence) and participation that is pushed from the top down (by government), but that a mixture of the two could provide positive opportunities for mutual understanding and cooperation to achieve multiple ends.

Everywhere, people solve their problems within their own social and cultural context (Dynes, 2006) and this is true with many communities. Community is defined as a group of people who share a common interest which binds them together, e.g. physical location (geographical or spatial community) or sociocultural issues such as heritage, common experience or common visions, values and expectations (Chile, 2007). Community also requires that members form a regularly interacting system of

networks (Dale & Newman, 2010), and these networks are what Murphy (2007) refers to as social capital. Other sources in the literature stress the importance of linking social capital to emergency management.

Social capital stresses the importance of social networks, reciprocity and interpersonal trust, which allow individuals and groups to accomplish greater things than they could through their isolated efforts (Murphy, 2007). In emerging theories of social science, community members are viewed as active participants in disasters. Unfortunately while we calculate damage to physical and human capital, Dynes (2006) notes that we usually ignore the social capital available within communities to deal with emergencies. The mobilisation of social capital for building diverse network formation is a necessary condition for sustainable community development (Dale & Newman, 2010). Similarly, in health education relating to cholera management, exposure to water contaminated by hazardous waste is neither caused by nor eliminated by a single individual but reflects social processes and inequalities (Israel, Checkoway, Schulz, & Zimmerman, 1994). Therefore understanding the complex determinants of health through community participation can inform the design, conduct and evaluation of community-based health programmes (Israel et al., 1994). A ladder of community participation in public health adapted from Morgan and Lifshay, (2007) will be used as a framework for analysis on how the community was involved and will also identify the areas for improvement to enhance community participation in future emergency planning.

Against the backdrop of these social theories, community participation can be improved if social capital is incorporated into the whole picture of planning for and managing disasters. These theories, when combined, allow an analysis framework for the findings from the research to be developed. A detailed discussion of the theories will be presented in the literature review.

1.3 Research Question

The questions this research will address are: What are the community's and local actors' perceptions of the cholera outbreak in Chinhoyi and what are the implications for emergency management in the future?

A set of semi-structured questions were used to answer the main research questions. Three main objectives were drawn up to guide the research and these were as follows:

- To explore community roles and perceptions about cholera and the cholera outbreak in Chinhoyi. What actions were taken by the community and what lessons can be learnt?
- To explore local actors' roles and perceptions of the cholera outbreak in Chinhoyi. What actions did they take and what lessons were learnt?
- To examine what recommendations might be made for future emergency management based on these findings?

The study used audio-recorded interviews and focus groups as data collection methods. Ethical approval was granted through the Auckland University of Technology Ethics Committee (AUTEK) on July 21, 2011.

1.4 Contribution to Emergency Management and Public Health

Emergencies and disasters do not affect only health and wellbeing; frequently, large numbers of people are displaced, killed or injured, or subjected to a greater risk of epidemics (WHO, 1999). This study will contribute to emergency planning and response in Zimbabwe by identifying the community roles, networks and perceptions which are often left unrecognised or unused. The roles and perceptions of community members are essential to building the necessary social networks which are useful for coordination, continuity and cooperation for emergency programmes to be effective (Quarantelli, 1988). Social networks also allow groups to accomplish greater things in emergencies than isolated efforts in (Murphy, 2007). Ronan and Johnston (2005) also note that active participation by all community members has now become a moving force. It focuses on what to do from the time a disaster occurs and its main priority is to prevent the loss of lives and property.

The study will also identify and encourage the potential synergy between government, other emergency management organisations and the community. This process induces a sense of ownership in affected people which results in their continuous engagement and long-term commitment to emergency management activities (Pandey & Okazaki, 2005). Community participation is important in both predisaster mitigation and the postdisaster response and recovery process.

Emergency preparedness with a special focus on communities plays a major role in meeting the Millennium Development Goals (MDGs) set to be reached by 2015. The Declaration was translated into a road map setting out eight time-bound and measurable

goals to be reached by 2015 known as the MDGs (UN, 2008). The eight listed goals include:

- Eradicating extreme poverty and hunger.
- Achieving universal primary education
- Promoting gender equality and empower women
- Reducing child mortality
- Improving maternal health
- Combating HIV/AIDS, malaria and other diseases
- Ensuring environmental sustainability
- Creating a global partnership for development

Incorporating the eight goals into an emergency preparedness framework would help to meet the targets and, moreover, would enable the building of sustainable communities. Zimbabwe, being a developing country will benefit from the study's findings which may provide the impetus necessary to achieve the MDGs locally and yet also contribute to the achievements globally.

The identification of knowledge gaps by this study will inform policies for building resilient communities. The exploration of community and emergency actors' perceptions will identify windows to empower communities at risk. In a report of the urgent needs identified in Zimbabwe after the cholera outbreak, one of those needs was to increase awareness particularly at grassroots level - regarding prevention and treatment measures (WHO, 2009). Most recorded deaths occurred at home, which means that more effective messaging directed to all communities, particularly with communities at risk, is crucial for the Zimbabwean public to be best prepared to act against an epidemic.

1.5 Structure of the Thesis

This structure of the thesis will be divided into six chapters. Chapter One will introduce the research problem and summarise the study. The second chapter will provide the literature review presenting theories and case studies relating to cholera in general and about the cholera in the Zimbabwean context. Chapter Three will present the research design including the choice of methods, field work and data analysis. Chapters Four and Five will present the results of the study and Chapter Six will state the conclusions.

Chapter 2: Community Roles, Cholera Management and Experiences of Zimbabwe

2.1 Introduction

This chapter reviews the emergency management literature related to cholera epidemics worldwide. In particular, it considers the shift in emergency management from a purely top-down management approach to a holistic bottom-up approach which promotes community participation. As a public health professional I believe that attempts to managing emergencies such as outbreaks should not rely only on science and expert knowledge but should rely on community knowledge with active institutional support for guidance and support.

The search for literature involved the use of the following keywords: cholera, emergency management and community participation. To be more relevant to the context about cholera in Zimbabwe, I added *cholera in Zimbabwe* as an additional phrase. I used health databases available from the Auckland University of Technology's library, EBSCO Health Databases, MEDLINE via EBSCO and Scopus with full texts from published articles and journals. Other sources were from unpublished journals and articles from Google Scholar that incorporated social theories into the emergency management concepts. Literature on Zimbabwe, when searched on EBSCO, provided six sources relating to emergency OR management OR community. Scopus provided 12 sources when searched using the key words 'emergency preparedness *and* cholera'. Most articles relied on clinical measures and community approaches that focused on health education and so I searched more widely for information on community emergency planning in health and applied the concepts to cholera management to draw out the concept of community-based emergency management.

Effective emergency management is the key to preventing a hazard as well as responding and recovering from an adverse event. Typically, approaches to managing emergencies are strongly biased towards a top-down approach (Dynes, 1994). This is because of the acute nature of these events, and because resources and expertise need to be mobilised quickly. It is also based on the traditions of managing such events derived from long-standing ideas about the capacity of military organisations to deal effectively with threatening situations. These ideas however cause a community to become passive recipients in emergencies. Recent studies argue that senior management in government and outside agents should act to support the community in the identification of issues which are important and relevant in their lives, and enable them to develop strategies to

resolve these issues (Laverack & Labonte, 2000; Lindsay, 2003). This paper suggests the need to engage both the communities at risk and the emergency actors on planning for and responding to emergencies.

2.2 Cholera and its Global Impact

Communicable diseases continue to pose a significant threat to public health and development globally. In developing countries, nearly half of the principal causes of deaths reported were from communicable diseases (Cockburn & Assaad, 1973). Cholera is one of the most devastating communicable diseases because it can reach pandemic proportions and it presents a major international health concern (Fournier & Quilici, 2007). Every year, more than 100,000 Cholera cases and 2,000-3,000 cholera deaths globally are officially reported to WHO (Fournier & Quilici, 2007). However, the true number of cholera cases is known to be much higher. Under-reporting and other limitations of surveillance systems, including inconsistencies in case definitions and the lack of a standard vocabulary, lead to the discrepancy in results (Sack et al., 2004). Some countries report only laboratory-confirmed cases, although many more cases are consistent with WHO's standard case definition which is: when a patient aged five years or more develops severe dehydration or dies from acute watery diarrhoea (in an area where disease is unknown), or where there is an epidemic and a patient aged five years or more develops acute watery diarrhoea, with or without vomiting (*Cholera*, 2009, 2010). Cholera's capacity to strike in explosive epidemics can overwhelm the health-care infrastructure, and the social, political and economic structures of a community. Such characteristics make cholera a continuing and acute public health problem in certain contexts (Calain et al., 2004).

Cholera is an acute diarrhoeal disease caused by the bacteria *Vibrio cholerae*. Typical symptoms include: the sudden onset of profuse, effortless, watery diarrhoea followed by vomiting, rapid dehydration, muscle cramps and suppression of urine. Unless there is rapid replacement of fluid and electrolytes, fatalities may be as high as 30 to 40 per cent (Park, 2005). *Vibrio* species grow naturally in estuarine and marine environments worldwide, and are able to survive and replicate in contaminated water with increased salinity. The disease is transmitted through the faecal-oral route, that is, eating food and drink contaminated by faecal matter that contains *Vibrio cholera* (Wachsmuth, Blake, & Olsvik, 1994). Asymptomatically infected humans can also be an important reservoir for this organism in areas where *Vibrio cholerae* is endemic (Igbinosa & Okoh, 2008). Cholera has an extremely short incubation period of two

hours to five days which enhances the potentially explosive pattern of outbreaks, as the number of cases can rise very quickly. About 75% of people infected with cholera do not develop any symptoms. Pathogens stay in their feces for 7 to 14 days and are shed back into the environment, possibly by infecting other individuals (Park, 2005). Individuals with lower immunity, such as the malnourished children or people living with HIV, are at greater risk of death if infected by the cholera (WHO, 2009) because of their weak immune systems. *Vibrio cholerae* O1 and O139 produce cholera toxin and are responsible for cholera (Nair, Albert, Shimada, & Takeda, 1996). *V. cholerae* O1 remains the epidemic agent of greatest concern and represents the only serogroup that is currently prevalent in Africa, Latin America, and Oceania (Calain et al., 2004)

The modern history of cholera began in 1817, when cholera spread out of India in what the literature describes as the first of the seven pandemics (Blake, 1994). The second pandemic occurred in 1829 to 1851 in Russia where citizens of Moscow were particularly hard hit before it spread to the Americas in 1832 (Colwell, 1996). In London cholera occurred in 1849 where the works of Dr John Snow was credited for stopping the spread the disease by identifying its connection to drinking contaminated water (Colwell, 1996). The third pandemic occurred from 1852 to 1859, the fourth followed in 1863-1879, the fifth (1881 to 1896), and sixth (1899 to 1923) (Colwell, 1996). In the 1900s the US was successful in curbing cholera cases through the provision of safe municipal water, especially in the New York area. However cholera is still endemic to areas in the south-western United States (Igbinosa & Okoh, 2008). In 1970, a seventh cholera pandemic reached the continent of Africa striking West Africa and North Africa with devastating consequences. Epidemics spread throughout the continent, and the disease is now endemic in many areas (Blake, 1994).

Figure 1 below (Gaffga et al., 2007) shows the global cholera outbreaks that occurred from the 1960s to 2005 in the three main continents, Africa, Asia and Latin America, where it still remains prevalent (Calain et al., 2004). According to WHO standards the normal acceptable case fatality rate (CFR) for cholera should be below 1% (WHO, 1993). Over the years Africa had led with the highest CFR of 1,8% followed by Asia with 0,6% and a complete success in terms of mortality for Latin America with 0%. It is however endemic (always present) in all the three continents (Maramovich, Urbanovich, Mironova, & Kulikalova, 2006).

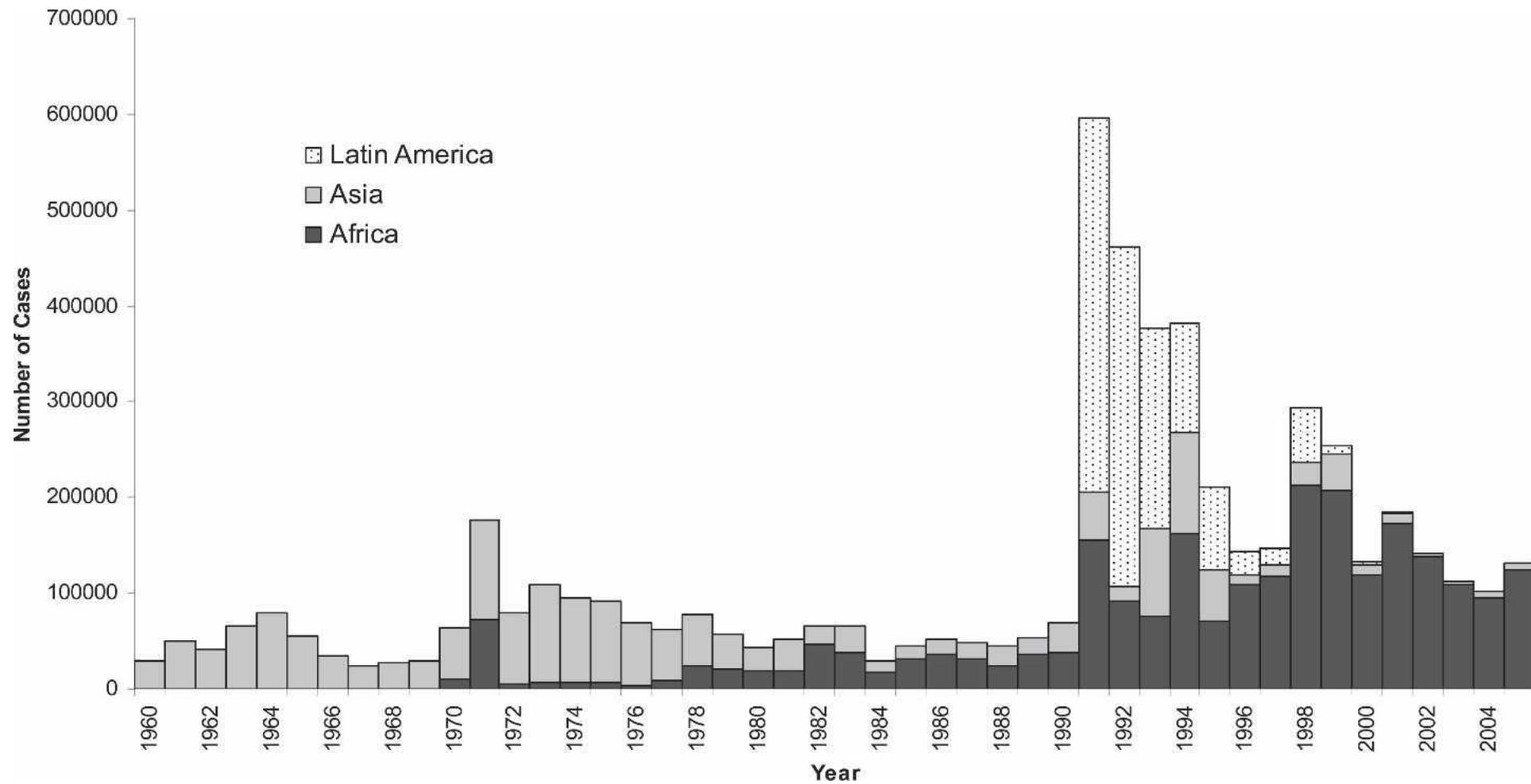


Figure 1. Number of cases of cholera reported to WHO by region (Africa, Asia, Latin America) and year, 1960–2005 includes both indigenous and imported cases of cholera. **Graph retrieved from <http://www.ajtmh.org/content/77/4/705.full.pdf+html>**

Oral rehydration solution (ORS) has been accepted as the cornerstone for treating diarrhoea and in the developing world, 'homemade' preparations, such as a litre of water containing half a teaspoonful of salt and six teaspoons of sugar, may be used. These solutions replace salts and water lost because of diarrhoea and usually no other treatment is required (*Oral Rehydration Therapy (ORT)*, 2010). For those severely dehydrated, intravenous fluids are life-saving (S. Bhattacharya et al., 2009). With emerging science, vaccines have been developed that could be used to prevent cholera. There are three oral Cholera vaccines (OCVs) which have been licensed in some countries and used mainly by travellers (WHO, 2005a). Connolly et. al., (2005), also note that pre-emptive vaccination strategies with oral cholera vaccine are possible but only in stable refugee settings, chronic complex emergencies, or in chronic situations with recurrent or seasonal outbreaks. Vaccination is however only limited to a 6-month effectiveness period and is therefore not practical for populations continually exposed to the evolving bacterium (Igbinosa & Okoh, 2008).

Cholera is easily prevented by provision of clean water and well-functioning water and sewage systems (Deb et al., 1986), (Smith, 2002). At household level, simple, effective, and affordable methods are needed to treat and safely store non-piped, gathered household water (Connolly et al., 2004). Water, sanitation, and hygiene interventions suggest that the beneficial effects of improving household drinking water quality at the point of use (POU) reduce diarrheal disease risks (Sobsey, Stauber, Casanova, Brown, & Elliott, 2008). Although prevention of cholera requires clean water supplies and appropriate sanitation facilities, the implementation of these improvements in low-income countries is often slow which places a greater risk of cholera epidemics (Zuckerman, Rombo, & Fisch, 2007). Given the acute and potentially devastating effects of a Cholera outbreak, prompt and effective management of such outbreaks in a given population, often on a large scale, has been and continues to be of vital importance.

2.3 Cholera and the History of Emergency Management

Cholera was linked to contaminated water during a cholera epidemic in London in September 1854 by Dr John Snow. He traced the source of the outbreak to a single pump in Broad Street by plotting known deaths on a map and conducting intensive interviews with the surviving families. Snow's work not only resulted in the end of the epidemic but it confirmed the theory that cholera was spread by contaminated water (Canton, 2007). Today most developed countries have provided safer infrastructure to

ensure clean provision of water and treatment of sewage before disposal to water bodies (Gaffga et al., 2007). In developing countries, the amount of treated sewage being discharged into rivers has increased over time and this has led to the deterioration of water quality in many of its major rivers (Roberts et al., 2001). In situations of outbreak, the provision of safe water and adequate sanitation can be established as emergency measures but Bhattacharya et al (2009) note that these measures are usually not guaranteed to remain once the outbreak ends. Epidemic preparedness, and the ability to detect and verify the existence of epidemics, is crucial for the early containment of outbreaks and reduction in mortality (Connolly et al., 2004).

There is evidence that emergency management has been practiced in the past. Early hieroglyphics depict caveman trying to deal with disasters. The Bible even speaks of the many disasters that befell civilians (Pandey & Okazaki, 2005), one of the greatest one being the account of Noah and the ark surviving the great flood. Current emergency management is the discipline of dealing with risk and risk avoidance and is usually the overall responsibility of national and local government (Haddow et al., 2007). It has a broader set of functions that go beyond search and rescue, emergency medical services, temporary shelter and feeding, and restoring lifelines. According to Waugh Jr and Streib (2006) it includes

- hazard mitigation to prevent or lessen the impact of disaster,
- disaster preparedness, such as emergency planning and training;
- disaster response activities, such as conducting search and rescue activities, and
- disaster recovery, usually meaning the restoration of lifelines and basic services.

This paper mainly focuses on preparedness and response which are important in planning for emergencies. The objective is to consider community participation within planning which will ultimately influence the response and recovery.

Emergency preparedness according to WHO, refers to a programme of long-term activities whose goals are to strengthen the overall capacity of a country or a community to manage efficiently all types of emergencies and bring about an orderly transition from relief through to recovery, and back to sustained development (WHO, 2007). It requires emergency plans to be developed, personnel at all levels and in all sectors to be trained, communities at risk to be educated and to ensure all these measures are monitored and evaluated regularly (WHO, 2007). However the planning is however often perceived to be the exclusive domain of one organisation, sector, or

level of society and government whereas WHO (1999) states that a disaster - by definition - exceeds the coping capacity of an entire community, and no single sector can manage it.

In cholera management, the concept of preparedness concerns prevention through adequate and timely information to policy and decision-makers as well as to the public (WHO, 2005). This is intended to demystify cholera outbreaks, leading to a more rational approach towards the disease and increasing the likelihood of preparedness, early detection and a rapid response to outbreaks. Greater financial support and commitment are needed to strengthen and encourage environmental management, in particular the improvement of water supplies and sanitation as well as to support research on new strategies (WHO, 2005b).

Central to the control of the cholera outbreaks are the roles of people in the community. Recently in a cholera outbreak in Haiti, communities played a significant role in response to the outbreak. Community mobilising was essential for slowing the spread of cholera after there were reports that severe diarrhoea was being treated with traditional remedies of guava leaves and rum and that people were dying from “supernatural causes” (Bien-Aime, Ernst, Rawson, & Weinrobe, 2011). Meetings were held with Hospital Albert Schweitzer (HAS) staff and influential community members such as traditional healers, teachers, religious and local leaders. Because of the limited number of nurses available, family members were also trained to become primary caregivers for cholera patients at the Cholera Treatment Camps (CTC) (Bien-Aime et al., 2011).

In Nigeria, a study was conducted in Kano State, Northern Nigeria, where recurrent cholera epidemics occurred; factors associated with the management of the epidemics and health outcomes were examined. The State Epidemiological Unit, which is responsible for surveillance, detected epidemics using set thresholds and activated multisectoral emergency responses. Control measures encompassed accurate diagnosis at the reference laboratory, registration of cases, case management, and public health measures targeting personal hygiene and water treatment. Case fatality rates decreased from 15% in 1995-96 to 5% in 1997 and 2% in 1999 (Usman et al., 2005). The organism responsible for all the outbreaks was *Vibrio cholerae*, El-tor of inaba serotype. Of importance the research concluded that multi-sectoral Epidemic Preparedness and Response (EPR) approaches contributed to the reduction in case fatality rates over the years. However, it was also noted that in order to prevent future cholera epidemics,

there was a need to introduce intervention measures that addressed the root problems of poor sanitation and unsafe water supplies (Usman et al., 2005).

2.4 Models for Emergency Management: The Military Model

The dominant model in emergency management had its roots in US military analogies (Dynes, 1994), which viewed emergencies as extensions of enemy attack scenarios. The model viewed emergencies as conditions of social chaos which were rectified by command and control. Its widespread use is explained less by its utility than by similar patterns of origin, adoption and implementation of the model (Dynes, 1994). It has been termed *dominant* because emergency planning efforts have been based on it. Fundamental assumptions of the model were summed up in terms of *triple Cs*. The first *C* indicated the *assumption that an emergency is characterised by CHAOS and the other two Cs suggesting that chaos could only be eliminated by COMMAND and CONTROL*. The roots of that formulation were derived from long-standing ideas about the capacity of military organisations to deal effectively with threatening situations.

Other researchers also note that the dominant paradigm continued to advocate that, ultimately, disasters were the product of nature and hazardous events; it focused attention largely on technocratic solutions through the transfer of knowledge, experience and technology and ignoring the historical and social dimensions of a hazard (Mercer, Kelman, Lloyd, & Suchet-Pearson, 2008). The pre-emergency period was assumed to be characterized by some notion of *normalcy* and the emergency period marked by manifestations of social chaos. The chaos would manifest widespread episodes of antisocial behavior causing the traditional social control mechanisms to lose their effectiveness hence requiring extraordinary measures to bring back normalcy (Dynes, 1994). Since the problem was found in the 'weakness' of people and social structures, establishing a *command* over chaos was seen necessary to regain control over the disorganisation of individuals. These interrelated assumptions are the philosophical underpinnings of much current emergency planning (Dynes, 1994).

The implications inherent in model are as follows,

- Civil institutions in emergency situations are incapable of dealing with emergencies thus needing supplementation by outside organizations.
- Local entities which could function effectively were paramilitary organisations such as the police and fire.

- Those organisations hoping to be effective in emergencies needed to change their structure towards a paramilitary management structure. In their current form they were perceived as fragile.
- The traditional forms of pre-emergency social organisation (families, voluntary organisations) were irrelevant to emergency actions.

The military model has a ‘top-down’ oriented approach in managing emergencies which clearly sidelines community participation as communities are assumed to be ill-resourced and incapable of effectively managing a disaster or an emergency. Dyne (1994) contests this theory highlighting the inadequacies of the military model in managing disasters. Dynes argues that the underpinning inferences of an emergency arising from this model were based on assumptions that emergencies were obvious and, if not detected, were a consequence of malfeasance or deceit. However not all emergencies are obvious and defining an emergency requires information about the status of the present compared with the condition of the past and making inferences about the consequences (Dynes, 1994). Information about emergencies also requires public input to effectively plan and respond to an emergency (Sistrom & Hale, 2006).

Landesman (2005) agrees that all disasters are unique because each affected region of the world has different social, economic and baseline health conditions. Moreover, communities are no longer viewed as passive or fragile and everywhere, people solve their problems within their own social and cultural contexts (Dynes, 2006). Most households are expected to use their own private resources to mitigate, prepare for, respond to and recover from a disaster (Morrow, 1999). A more proactive model for planning for emergencies has become the new trend in today’s emergency management systems with public participation gradually becoming an accepted part of the disaster management process (Pearce, 2003).

It is however recognised that while a top-down policy may be appropriate, it is really the local-level, bottom-up impetus that is likely to count for the implementation of mitigation strategies and a successful disaster management process (Pearce, 2003). Handmer and Dovers, (2007) also note that, there may be a broad split between participation that is demanded from the ‘bottom up’ (community insistence) and participation that is pushed from the ‘top down’ (by government); but, commonly, a mixture of the two will be evident and could provide positive opportunities for mutual

understanding and cooperation to achieve multiple ends. This study advocates for the use and practice of a community engagement oriented model for planning for and managing emergencies.

Why engage with communities?

For too long officials have not wanted to reveal hazards and risks to their respective communities, fearing that panic would prevail or that people would flee yet community members have the right to know and to understand what hazards to expect, and also have the right to participate in making difficult decisions (Pearce, 2003). The underlying theorem of community engagement models in disaster management is that the more the recovery relies upon local resources, the quicker the community will be able to move to self-sustainability, and thus from recovery to normalcy (Lawther, 2009).

In order for community members to influence politicians, they need to have access to the information essential to decision making (Pearce, 2003). As the International Federation of Red Cross and Red Crescent Societies (1995 cited in Pearce, 2003) points out, the public's right to information is a fundamental feature of democracy and is essential to disaster preparedness. Once people have access to information as a right – not just from their country's government, local authorities, companies and interest groups, but also from international organizations and aid agencies, they can then plan for themselves, make informed choices, and act to reduce their vulnerability (p. 37). Residents and all sectors of the community have a critical role and shared responsibility to take appropriate actions to protect themselves, their families and organizations, and their properties unlike the assumptions inherent in the Military model.

In the United States, results from a research conducted after the 2004 Florida Hurricanes -Charley, Frances, Ivan, and Jeanne, indicated that emergency planning strategies that included the whole community with pre-season planning, open communication between emergency managers and elected officials, had a significant impact on community responses (Kapucu, 2008).

In public health, community engagement promotes efforts for mutual exchange of information, ideas and resources between community members and health departments (Morgan & Lifshay, 2007). While the health department shares its

expertise, services and other resources with the community through this process, the community can share its own wisdom and experiences to help guide public health program efforts (Morgan & Lifshay, 2007). In light of outbreaks, Siström and Hale (2006) suggest that community participation is an informal element of outbreak investigation in that rapid investigation, accurate data collection, and successful control of outbreaks are dependent on the extent to which the affected community is willing and allowed to participate.

The shifts from reactive (Military approaches) to proactive ‘bottom-up’ (community engagement approaches) measures, moves the disaster management from a focus on response and recovery activities to focusing on community planning. Having a multi-disciplinary approach to disaster management recognizes the many interests that exist in the community, and by striving to create partnerships, attempts to balance competing interest while working towards common goals. The emphasis on working and relating with the community puts a strong onus on disaster managers and community planners to involve the public in their planning (Pearce, 2003). Community participation is also vital as people’s participation is not only focused on processes but on content or detail, which is generally taken to mean that a given community takes responsibility at all stages of a program including planning and implementation (Ronan & Johnston, 2005).

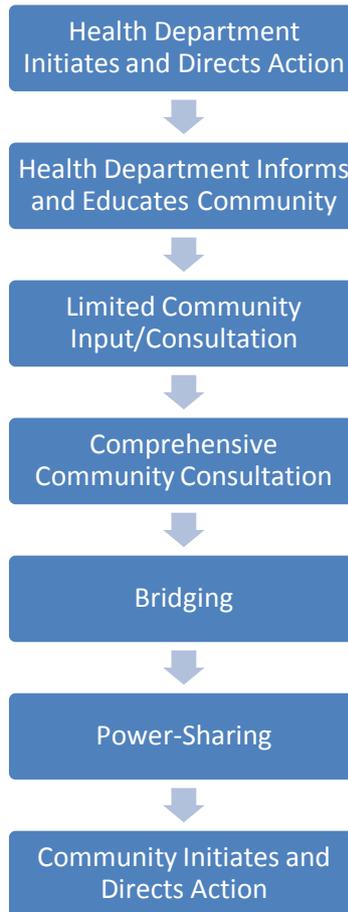
2.5 Community participation in Public Health

In public health, to address the complex health issues effectively, local health departments must broaden their approaches and use a spectrum of strategies to build community capacity and promote community health (Morgan & Lifshay, 2007). It is also generally taken to mean that a given community takes responsibility at all stages of a program including planning and implementation (Ronan & Johnston, 2005). In outbreak instances, community members naturally gather and share information with other members and through casual and purposeful contact with other members, case definition and case finding in outbreak investigations can be expedited (Siström & Hale, 2006). This partnership between health professionals and community constituents is argued by other health professionals that it enhances the sharing of responsibilities, decision making and commitment to interventions to improve community health outcomes (Porche, 2004).

Disasters on the other hand are no longer viewed as extreme events created entirely by natural forces but as unresolved problems of development. It is now recognized that risks (physical, social and economic), unmanaged (or mismanaged) for a long time, lead to the occurrence of disasters (Ronan & Johnston, 2005). In light of cholera outbreaks, poverty, malnutrition, overcrowding, and unhygienic living conditions are important contributing factors contributing to the spread of cholera. (Deb et al., 1986). Understanding local practices and participation of the community is key in implementing interventions strategies for cholera (Connolly et al., 2004). An investigation in a Malawian refugee camp that underwent repeated cholera outbreaks showed that an improved water bucket with cover and spout to prevent household contamination was more acceptable to the population, despite the existence of a less familiar but more cost-effective method of chlorinating water (Roberts et al., 2001)

The Ladder of Community Participation framework shown in (Figure Two) below is a framework I have adopted from a local health department in California. It illustrates a range of approaches that can be used to engage communities in the traditional and emerging public health issues. The framework was originally promulgated by Arnstein (1969) cited in (Lawther, 2009) in the United States context and also adapted by (Choguill, 1996) in the context of developing countries, and has been very influential ever since in community participation in public sector programmes. Morgan & Lifshay's framework drew my attention as it was designed to address public health issues including public health emergencies and disaster response. The Ladder describes a continuum of approaches that can be used by arranging strategies according to the degree of community and public health department involvement, decision making and control. At the end of the continuum, either the local health department or the community takes the lead. Along the continuum, more balanced power-sharing can be achieved which involves collaborated decision making to set up health priorities, identifying interventions and determining how resources will be allocated. At any level of the Ladder, ongoing communication between the health department and the community is essential to foster trust and to ensure that those in the lead are informed to craft viable solutions for everyone (Morgan & Lifshay, 2007).

Figure 2. The Ladder of Community Participation



The Ladder of Community Participation (Morgan & Lifshay, 2007)

Phase 1: Health Department Initiates and Directs Action

In the model the local health department leads the decision making and directs actions. In emergency situations, it has been noted that communities are likely to follow public health directives if they were involved in the development of the procedures and had the chance through that process to develop a sense of trust with the local health department (Morgan & Lifshay, 2007). Social science theories also stress the importance of social networks to build reciprocity, and interpersonal trust, which allow individuals and groups to accomplish greater things than they could by their isolated efforts (Murphy, 2007).

Phase 2: Health Department Informs and Educates

In this phase, one-way communication from the local health department delivers health information to the community through various mechanisms and channels. The

communication could be through printed material such as brochures and flyers, electronic and other forms of media. Trained health officials could also deliver health messages through one-on-one instruction or classes held in clinical settings (Morgan & Lifshay, 2007). The availability of information allows the public to make informed choices regarding risk. In this way risk communication facilitates decision making and risk sharing (Pearce, 2003).

Phase 3: Limited Community Input/ Consultation

With the limited input/consultation strategy, the local health department solicits occasional community input on the predefined, discrete issues, and subsequently uses this information to make decisions about interventions. This strategy assesses community needs or gathers consumer feedback related to health programs through surveys, interviews, focus groups or community forums.

Phase 4: Comprehensive Community Consultation

The local health departments solicits community input on broad range of issues and engage community members in helping to shape department priorities related to programs, planning and resources. This strategy requires commitment of resources and is characterized by on-going and institutionalized mechanisms for community involvement such as advisory boards.

Phase 5: Bridging

The Bridging strategy engages community members as conduits of information and feedback both to local health department to the community. Often individual residents are trained to be health educators. These bridging roles serve as institutionalized entry points through which diverse people and ideas become part of and influence a health program. The bridging roles can also become formal mechanisms for creating a more diverse health workforce.

Phase 6: Power-Sharing

The community and local health department solve problems together (Morgan & Lifshay, 2007). Members of the community and outside decision-makers and planners agree to share planning and decision making responsibilities about development projects involving community participation through such structures as joint policy

boards, planning committees and eventually other informal mechanisms for resolving problems(Choguill, 1996).

Phase 7: Community Initiates and Directs Action

With this option, the community makes decisions and acts independently of the health department. In some cases, the health department has no or only a very few limited role in the activity. Communication in this case comes in form of community organizing and advocacy. From this kind of community initiative, real opportunities for public health departments to respond and support community-defined concerns and setting the future stage for collaborations (Morgan & Lifshay, 2007). Understanding local practices and participation of the community is key in implementing interventions strategies for Cholera (Connolly et al., 2004).

2.6 Defining Community

There are various definitions for the term community but for this paper a community will be defined as a group of people who share a common interest that bind them together, which could be physical location (geographical or spatial community), socio-cultural issues such as heritage, common experience or common visions, values and expectations (Chile 2007). In this context the common experience of the outbreak and location stem out to be two important aspects for defining the community under study. The term ‘community’ also requires that members form a regularly interacting system of networks (Dale & Newman, 2010) and these networks are what Murphy (2007) refers to as social capital.

Social capital refers to the broad idea that social relations and values constitute an asset (as do physical or human capital), which assist in the attainment of development goals (p.332) (Hall, 2006). Other social science researchers define social capital in disaster management as a function of trust, social norms, participation, and network which can play an important role in recovery (Nakagawa & Shaw, 2004). Community members in theories of social science are viewed as active participants in disasters (Ronan & Johnston, 2005). Unfortunately while we calculate damage to physical and human capital Dynes (2006) notes that, we usually ignore the social capital available within communities to deal with emergencies. The mobilization of social capital for building diverse network formation is a necessary condition for sustainable community development(Dale & Newman, 2010).

Networks composed of “bridging links” to a diverse web of resources strengthen a community’s ability to adapt to change, but networks composed only of local “bonding links” impose constraining social norms which can reduce resilience. Bonding ties are relations between family members, friends, and neighbours in closed, tightly connected networks. Bridging ties give access to resources and opportunities that exist in one network to a member of another network (S. Bhattacharya et al., 2009). Similarly in a Cholera outbreak, networks at household, community or at state or local government level are important. An effective outbreak response often needs the same networks to be the engine of the response. Planning for such events is vital and should be done with a broad set of partners and adequate provision made to ensure availability of drugs, vaccines, and other supplies such as personal protective equipment that might be needed (Connolly et al., 2004).

Networks consisting of various actors (federal agencies, local agencies, individuals, special interest groups, public organizations, private organizations, non-profits etc) reduces the tendencies for autonomous power to determine strategies of all the other actors (Farazmand, 2001). This diversity is also critical for enabling a community to move beyond adaptive management to an inclusive proactive participation with various actors to maintain and enhance resiliency (Waugh Jr & Streib, 2006). An integrated approach based on the community participation framework and the social capital philosophies incorporated into emergency management, increases the effectiveness of networks in cholera outbreak situations. The capacity to verify rumours and undertake field investigations to confirm outbreaks through simple descriptive epidemiology and targeted clinical sampling for laboratory diagnosis is also enhanced (Connolly et al., 2004). As there has been a paradigm shift to seeing disasters and emergencies as being caused by unresolved issues (Ronan & Johnston, 2005), communities should also directly take part in the development process of identifying strategies to address the underlying problems. Against the backdrop of these social theories on community roles, social capital and community resiliency, it is possible to incorporate community planning in managing disasters.

2.7 Background to Cholera in Zimbabwe

At the beginning of the 1990s, the urban population of Zimbabwe was less poor, and generally more economically and socially secure, than probably any other African urban population in sub-Saharan Africa (Potts, 2006). From the late 1990s, Zimbabwe entered a period that has become to be known as the ‘Crisis in Zimbabwe’. This

upheaval consisted of a combination of political and economic legacies of colonial rule as well as the political legacies of African nationalist politics (Raftopoulos & Mlambo, 2009). The key aspect of the crisis was the rapid decline in the economy, characterised by, amongst other things; steep declines in the industrial and agricultural productivity; historic levels of hyperinflation; the informalization of labour; the dollarization of the economic transactions; displacements; and a critical erosion of livelihoods. (Raftopoulos & Mlambo, 2009).

Before the inclusive Government was formed, political strife continued, reintroducing further the already mentioned impacts to the country's socio-economic structures that had a trickle-down effect to the health and wellbeing of its citizens. Of health and socio-political relevance to this study was the controversial move by the Government in May 2005 called the Operation Murambatsvina translated as 'clear out the filth'. It was a massive onslaught on the informal sector carried out as a militarised urban 'clean-up' (Raftopoulos & Mlambo, 2009). Sachikonye (2006), and Potts (2006) note that the reason for the Operation was a deliberate move by ZANU (PF) to weaken the MDC that had won 26 of the 30 parliamentary seats in major cities and towns, by punishing its urban supporters. The operation was based on an assumption that those pushed out of the urban areas could return to their homes in the rural areas, but by 2001 half of them were urban born and did not have a rural home to return to (Raftopoulos & Mlambo, 2009). The government argued that the operation was aimed at arresting disorderly or chaotic urbanization, including its health consequences; stopping illegal, parallel market transactions; and reversing environmental damage caused by inappropriate urban agricultural practices (Harris, 2008).

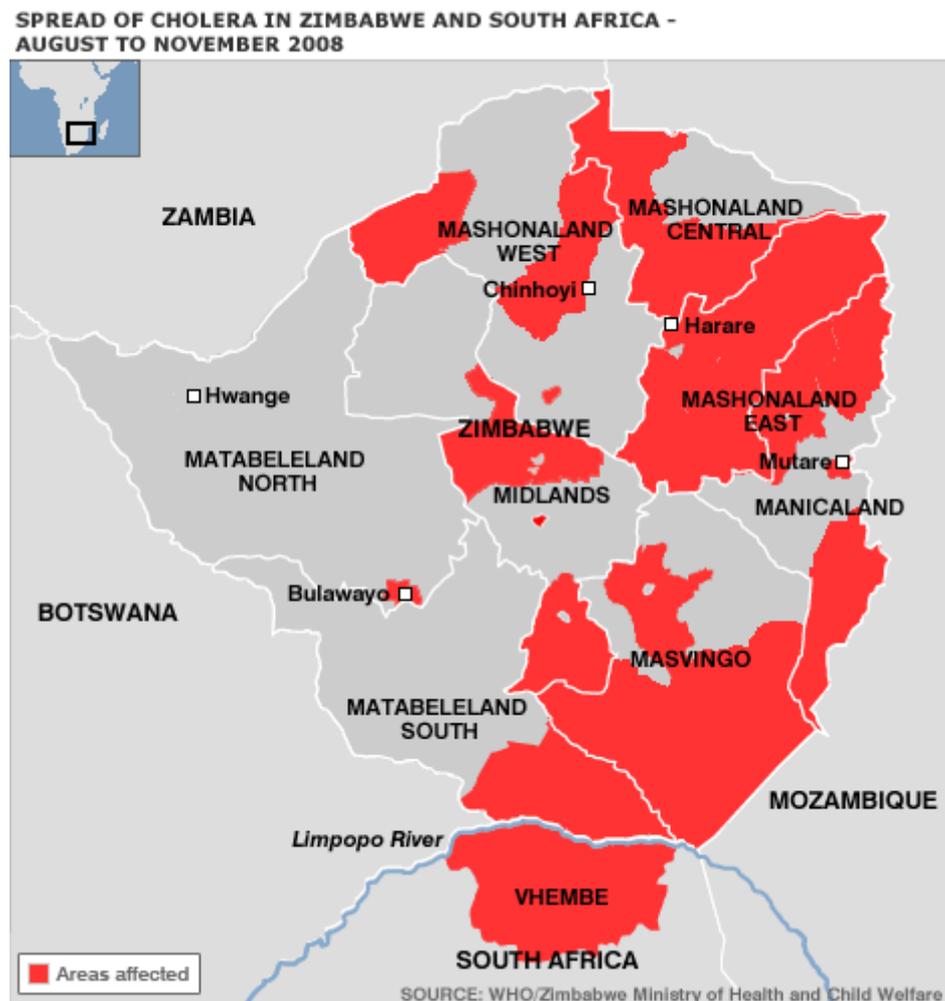
An estimated 650 000-700 000 were directly affected and 2,5 million people indirectly affected by the Operation (Sachikonye, 2006). Water shortages in the same year became frequent in many cities including Harare, Bulawayo, Chitungwiza and Mutare. The infrastructure to supply water and handle sewerage disposal was creaking and grossly inadequate leaving the homeless vulnerable to potential disease outbreaks such as cholera (Sachikonye, 2006). The immediate consequences of the demolitions were an upsurge in homelessness, an escalation in rentals for accommodation and more overcrowding in the existing housing stock. It was estimated that about 20 per cent of those whose housing was destroyed became homeless; some 30 per cent were absorbed i.e. 'housed' by close and extended families and by friends. Another 30 per cent sought

refuge within communities (in churches and other forms of temporary accommodation) (Tibaijuka, 2005).

The first cholera outbreak was reported in late 1992, following a severe drought and an influx of refugees from Mozambique for the first time since 1985 and rapidly spread through the rural areas of the country (Bradley et al., 1996). The outbreak occurred in Manicaland and Mabvuku/Tafara in Harare (Mason, 2009) with just over 2 000 cases and a mortality of 5%. The following year had 5 385 cases and 381 (6%) deaths. Another one occurred in 1998 with more than 1000 cases and 44 deaths and the following year there were 5637 cases with 385 deaths. Most of these cases were in Chipinge and Chiredzi, in the south-east of the country again close to the Mozambique border (Mason, 2009). In 2002, 3125 cases were reported in Manicaland and Mashonaland East, including 192 fatalities. In 2003, 304 cases and 11 deaths were reported in Kariba, on the border with Zambia, and a further 99 cases, 16 of them fatal, reported from Binga, a small fishing community on the shore of Lake Kariba. The common feature with these outbreaks were that they occurred in border communities suggesting that Cholera was imported from endemic regions in surrounding countries during cross boarder trading and migration (Mason, 2009).

In mid-August 2008 to end of July 2009, Zimbabwe experienced a devastating Cholera outbreak that claimed lives of many and was the worst recorded in Africa in 15 years. According to a WHO Global Alert and Response report (2009), 4 276 deaths (Case Fatality Rate of 4.3%) were reported by the Ministry of Health and Child Welfare (MoHCW). As of 23 January 2009, a total of 50 815 suspected and confirmed cases and over 2800 deaths had been reported to the World Health Organization (WHO). Fifty-five out of 62 districts in all 10 provinces had been affected. Figure Three shows how the outbreak spread across the country during the first four months of occurrence, August to November 2008.

Figure 3. The spread of Cholera in Zimbabwe



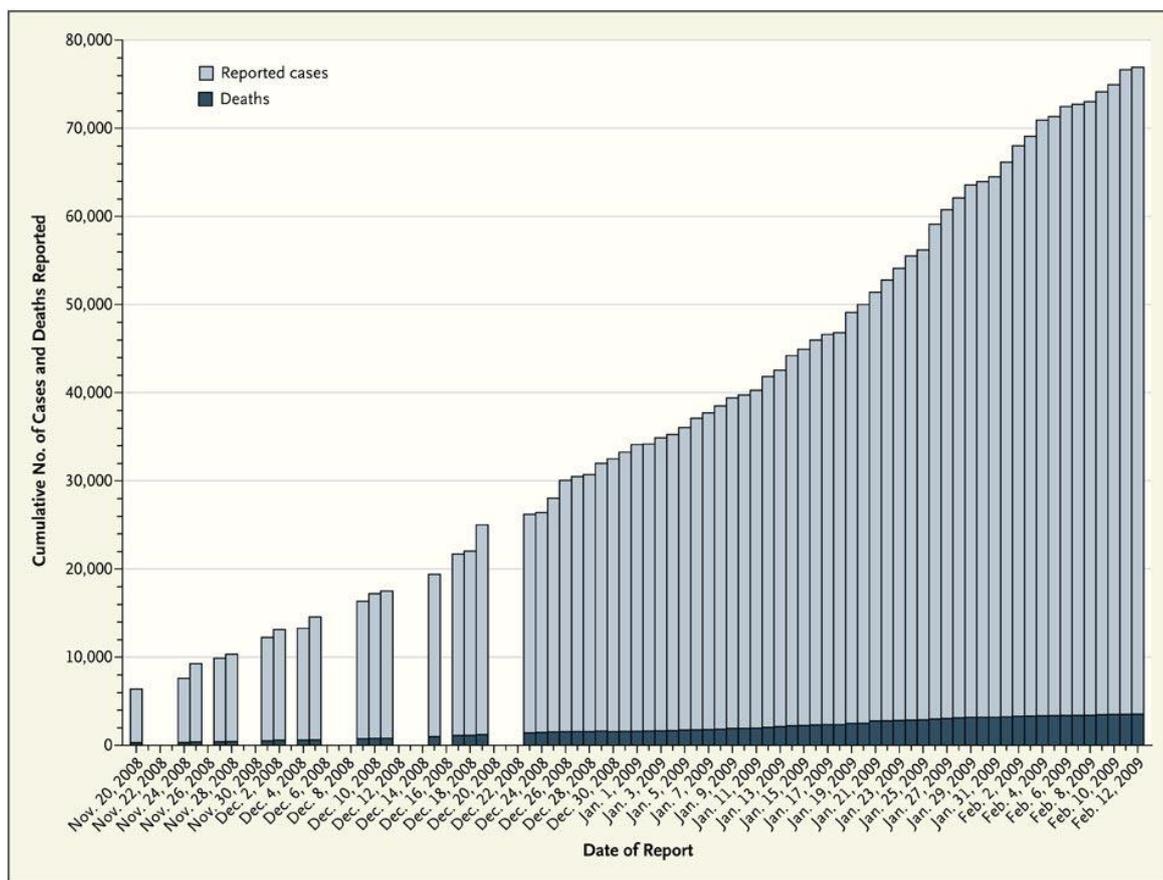
Source: WHO/ Zimbabwe Ministry of Health and Child Welfare 2010.

The devastating political instability and economic collapse witnessed over the last decade produced a loss of infrastructure necessary to facilitate domestic food production and maintain essential services including water, sanitation and hygiene (Fisher, 2009). The crisis worsened in part because the public health system, devastated by the loss of so many doctors and nurses who fled the country to make a living elsewhere, was severely understaffed and underfunded (Koenig, 2009). Key health personnel were demoralized by poor pay packages and their inability to practice their medical professions because of shortages of diagnostics, drugs and support systems (Mason, 2009). Doctors and health professionals who were still working in Zimbabwe echoed the new prime minister Morgan Tsvangirai's plea for outside help (Truscott, 2009). Other health professionals reported that wages were not the only factor that pushed Zimbabwean health professionals away but also considered education for their children and opportunities for career development (Truscott, 2009).

Case fatality ratios (CFR) in most districts exceeded 5%, based on cases recorded at health clinics. Outside of the clinics, community fatality ratios were estimated by WHO to be 22-48%. In most provinces about 40% of all cholera deaths occurred in the community (Mason, 2009). The transfer of responsibility for water supply and sewerage disposal from City Councils to the Zimbabwe National Water Authority (ZINWA) was also closely linked to the 2008 outbreak which resulted in parts of Harare and Chitungwiza running without water for more than 2 years (Mason, 2009). ZINWA could not efficiently treat the water supply mainly due to a lack of economic resources to buy the chemicals, which resulted in the supply of unclean water and in some cases water was completely shut off. Apart from causing a lack of access to safe drinking water, ZINWA's failure to maintain and manage basic water infrastructure led to the blockage of sewage pipes. The piped water systems eventually burst resulting in the cross-contamination of untreated sewage and clean water (Da-Sylva & Fukuda-Parr, 2009).

A state of emergency was declared in the first week of December 2008 by the Health Minister, at which time an appeal for international help was made. Ministry of Health and Child Welfare (MoHCW) received assistance from groups including WHO, Medicin Sans Frontiers (MSF), UNICEF, Oxfam, the Centres for Disease Control and Prevention (CDC, USA), Plan International and the Red Cross (Fisher, 2009). Below Fig 4. shows the graph for cumulative cholera cases and deaths from November 2008 to January 2009. (adopted from (Da-Sylva & Fukuda-Parr, 2009).)

Figure 4. Cholera Cases and Deaths in Zimbabwe (November 20, 2008 – February 12, 2009).



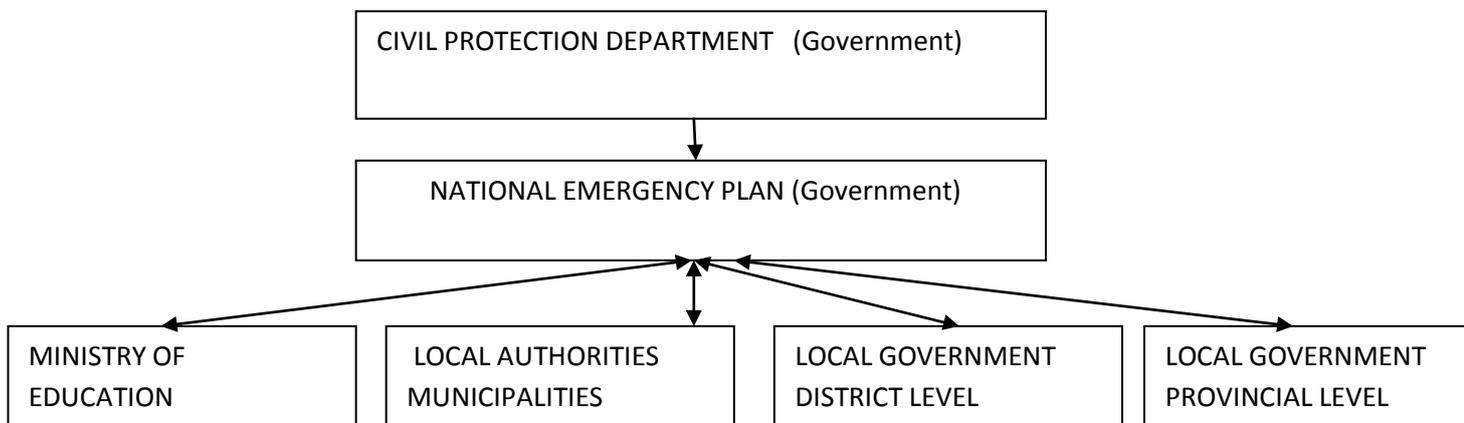
Data are from the United Nations Office for Coordination of Humanitarian Affairs (<http://www.ochaonline.un.org/Zimbabwe>).

2.8 Emergency Management of the Cholera Outbreak in Zimbabwe

Planning for emergencies is done at various levels: the sectoral level for example, the education sector, local and district authority level, and provincial and national levels. In Zimbabwe, the Civil Protection Department housed in the Ministry of Local Government and Public Works, is responsible for the overall framework for the promotion, coordination and execution of emergency and disaster management. A new policy states that every citizen of the country should assist where possible to avert or limit the effects of disaster. As provided by the Zimbabwe Civil Protection Act of 1989, central government initiates hazard-reduction measures through relevant sector ministries with the local administration taking the responsibility for implementing it effectively. All these levels are required to produce operational emergency preparedness and response plans which are activated during emergencies and disasters. The National Civil Protection Plan forms the overall framework for the promotion, coordination and execution of emergency and disaster management in Zimbabwe. The localised plans

dovetail in to the national plan. In July 2003 the government introduced disaster risk reduction (DRR) efforts into the education system to promote a culture of prevention. in July 2003 focusing mainly on production of comprehensive guidelines on emergency procedures for schools and other educational institutions, integration of disaster risk reduction into the schools curricula and improving guidelines on the setting up of construction and maintenance of schools infrastructure (International Strategy for Disaster Reduction (ISDR) 2000).

Figure 5. Emergency Management Structure in Zimbabwe



In the midst of the 2008 -2009 cholera outbreak, the health sector and various local authorities faced economic challenges, limiting their effective management of the cholera outbreak. Effective cholera preparedness and control measures should ideally keep case fatality rates below 1% (Connolly et al., 2004). It is also required that a single suspected case of cholera be reported immediately, and managed and treated according to national guidelines in Zimbabwe MoHCW (2002). However the case fatality rates remained remarkably high ranging from 3% to 10%, reflecting the difficult circumstances faced by local health-care providers (Fisher, 2009). In January 2009 most of the recorded deaths were noted to have occurred at home, i.e. 66% of the 1,948 deaths from 61,304. Risk factors identified in communities were: lack of awareness about the disease, cultural and religious behaviours, lack of potable water, weak sanitation, lack and inappropriate use of water purification tablets, and lack of soap and water containers to effect behaviour change (Yao, 2011). Health and Water and Sanitation Hygiene (WASH) education tools and practice sessions for healthy and hygienic behaviour change were intensified. Community-based surveillance, with early

warning systems and response teams, was promoted. Water tanks, containers and water purification tablets were also distributed as intervention methods (Mason, 2009).

Provision of safe water and adequate sanitation are key procedures to be established as emergency measures during cholera outbreaks (S. Bhattacharya et al., 2009). In Zimbabwe, WHO took the unusual step of setting up a Cholera Command and Control Centre (C4) in the capital of Harare to coordinate an array of international groups, including UN agencies. The Centre worked around the clock to shore up health services, distribute medication, and treat water (Koenig, 2009). As water supply continued to be erratic, even during the outbreak, community groups (in Harare) - such as the Combined Harare Residents' Association (CHRA) focused on the water crisis issues and highlighted that water problems were a direct result of ZINWA's incompetence since it took over from Councils (Da-Sylva & Fukuda-Parr, 2009). The diarrhoeal cases at household level increased. The basic oral rehydration ingredients (salt, sugar and clean water), credited for preventing 40 million deaths since they were formally endorsed by WHO, were beyond the means of many Zimbabweans; they could not afford to purchase sugar and salt as a result of the economic crisis (Mukandavire et al., 2011). Rather than dispensing the recommended oral rehydration salts, the government initially encouraged people with cholera to rehydrate themselves at home by drinking a solution of salt and sugar—an ineffective response because many could not afford the ingredients (Koenig, 2009). This scenario also indicated that clinics and hospitals were unable to acquire and stock even the basic medicines and materials to provide health care (Mason, 2009).

A solar disinfection method known as SODIS was also introduced in some parts of Zimbabwe (Murinda & Kraemer, 2008). SODIS was successful in Kenya, and according to a survey conducted by the Institute of Water and Sanitation Development in a peri-urban township near Harare (Epworth), the method was being fairly widely practised despite the low level of knowledge about bacterial contamination and the need to treat water. Availability of the Polyethylene terephthalate (PET) plastic bottles was a challenge for this method. It also proved to be an expensive method although it was recommended to be a viable project to address sanitation problems if it had a budget that factored in the costs to fully implement it (Murinda & Kraemer, 2008).

A multisectoral approach in managing and planning for disasters is required including the locally affected community (WHO, 2009). During the outbreak WHO, including its Global Outbreak and Alert Response Network (GOARN) and its partner

organisations deployed epidemiologists, logisticians, public health experts, infection-control specialists and communications and social mobilisation experts. It also procured diarrhoeal disease and emergency health kits and medical supplies for the affected areas across Zimbabwe. More than 172 cholera treatment centres (CTCs) across the country received assistance from external non-governmental organisations (NGOs). The average population served by a CTC was 211,000 with a peak of 670,000 people served per cholera treatment unit in Harare (Fisher, 2009).

It is acknowledged that community-based preparedness and response should then take into account an integrated joint intervention package to mitigate public health threats (Yao, 2011). In outbreaks, surveillance and monitoring depends to a great extent on having personnel in place at functional community health care clinics. Surveillance was severely compromised in Zimbabwe to the extent that data completeness was estimated to be only 30% (Mason, 2009). An outbreak response team of more than 40 experts, including national and international disease control specialists from across WHO, worked on technical coordination, early warning alerts, social mobilization activities, case management and training, outbreak logistics, laboratory support and critical response activities in the most affected provinces (WHO, 2009). Epidemiological data showed a significant decrease in cholera cases where the full package was implemented. This response showed that an integrated package of interventions jointly targeting risk factors can be effective with respect to public health threats.

In February 2009, an inclusive government was formed and one of its immediate tasks was “Getting Zimbabwe Moving Again”. Within a few weeks, the new government launched the Short-Term Emergency and Recovery Programme (STERP) as a strategy to rehabilitate the country, (National Health Strategy, 2009). Utilising the National Health Strategy developed in 2008, the MoHCW will attain the STERP goals through the combined efforts of individuals, communities, organisations and the government, which will allow them to participate fully in the socioeconomic development of the country. The ministry realises that in the current socioeconomic environment it is unrealistic with its limited financial and human resources to implement the entire five-year agenda at once. As a follow up to this strategy, a “Three Year Rolling Plan” will therefore be developed prioritising the resuscitation of the ailing health system and making it more functional, in order for it to be able to address the main diseases and conditions which most impact the health of the nation. The

governments' move to plan strategically for the long term is congruent with the concept of an emergency preparedness programme of long-term activities whose goals are to strengthen the overall capacity of a country or a community to manage efficiently all types of emergencies (WHO, 1995).

2.9 Conclusion

This chapter discussed cholera management, community participation and the experiences of Zimbabwe. In Zimbabwe, cholera management took the form of a top-down, 'reactive' approach as the C4 eventually took the coordinating role to source needed resources since the country faced economic challenges. Communities were only slightly involved rather than providing clearly defined roles that present bonds or shared collaborations from the planning through to recovery from the outbreak. In the following chapter, the paper will present a study for exploring the concept of community engagement in relation to the cholera outbreak in one community in Zimbabwe.

Chapter 3: Cholera Outbreak in Chinhoyi: A Study Design for Exploring Roles and Perceptions

3.1 Conception of the research

The study aimed to explore the roles and perceptions of a community in the face of a cholera outbreak, and to explore the perceptions of the local authorities and other emergency actors in planning for and responding to the outbreak. The study also intends to inform policy makers and health practitioners in Zimbabwe. The research focuses on one cholera-affected urban community, Gadzema. The following question guided the research: What are community and local actors' perceptions of the Cholera outbreak in Chinhoyi and what are the implications for emergency management in future?

Three main objectives were drawn up to guide the research and these were as follows:

- To explore the community's perceptions about cholera and the outbreak in Chinhoyi. The questions asked related to their knowledge of the disease, what actions they took and what lessons were learnt.
- To explore local actors' perceptions of the cholera outbreak in Chinhoyi. The questions asked were: What actions were taken and what lessons were learned.
- Based on the findings, the final question was what recommendations might be made for future emergency management.

Given the limited period in the field of seven weeks, I used a case study approach focusing on one urban area in Chinhoyi Town; an area that I am familiar with through my work as an Environmental Health Officer. A reason that informed my choice of study was that the 2008 cholera outbreak in Zimbabwe was prevalent in high-density urban areas where basic water and sanitation is least likely assumed to be problematic compared to the rural remote areas (Mason, 2009). High-density areas in Zimbabwe are predominantly comprised of residents with lower income and the low density areas are usually made up of residents with higher income. Historically, high-density neighbourhoods were areas where Black families were forced to reside, first by the British and then by the Rhodesian colonial authorities who sought to segregate Black and White residential areas (Mataure et al., 2002). The high-density neighbourhoods remain home to a majority of the young and old, and are characterised by lower to middle-class socioeconomic status (Mataure et al., 2002). Low income

communities are disproportionately affected by disasters (Nepal, Banerjee, Perry, & Scott, 2011), so I focused on a community in the high-density area which first reported a cholera case in the 2008 outbreak for Chinhoyi, that is, Gadzema.

While acknowledging that a community has a much broader profile of men, women and children, I limited my research to adults over the age of 18 years and also those who had or have a significant community role. The intention was to elicit perceptions from community members regardless of their gender who had played a role before, during and after the outbreak and also to gain the perceptions from emergency actors who managed the outbreak. Community participants were invited from a range of backgrounds: parents, guardians, health volunteers, and medium scale business entrepreneurs, church leaders, traditional healers to teachers and Councillors.

As a social activity, emergency response involves multiple agencies across functional disciplines and jurisdictions (Chen, Sharman, Rao, & Upadhyaya, 2007). Therefore any other participants invited were key informants from institutions and organisations responsible for managing and coordinating local emergencies. These were invited from the Ministry of Health (MoH), the Municipality of Chinhoyi (MoC), non-governmental organisations, faith-based organisations and schools. Schools were part of the research as they have an instrumental role in the community and I targeted School Health Masters whom I was recommended to and granted the permission to approach by the Ministry of Education. School Health masters are appointed teachers in every school who teach health-related issues to the pupils. This initiative was introduced by government in the DRR programme in 2003. I used a qualitative descriptive methodology because it tends to draw from the general tenets of naturalistic inquiry (Sandelowski, 2000) and the descriptions always depend on the perceptions, inclinations, sensitivities, and sensibilities of the describer. My role in the research was key as I am not an outsider to the area and in addition I played a role in the cholera outbreak that I am studying.

3.2 My Role as the Researcher

Health and environment are two major components that describe my job as an Environmental Health Officer and having studied in this discipline, my interests in cholera were inevitable. My work has been driven by my personal interest in a community development approach and not merely preventing or temporarily solving community health problems. What specifically drove my passion to research on cholera

in Chinhoyi was the need incorporate community perceptions and participation into emergency planning. I realised that communities often have voices before, during and after a disaster but often their voices are not given a chance to be heard unless it involves political imperatives to buying votes. After I was awarded a NZAID developmental scholarship in 2010, I had the platform to initiate a research on cholera and related emergency management.

In 2008 when the cholera outbreak hit the town of Chinhoyi, I was employed by the Municipality, working as an Environmental Health officer for two years. It was an experience that was overwhelmingly demanding as a series of events unfolded and there was little time to prepare. It was an eye-opening experience to manage an outbreak despite the devastating mortality rate. It was my first emergency since my career began. This experience focused my desire on emergency preparedness as it became clear that it is an area that requires more attention to improve a community's capacity to handle a disaster and utilise the available resources and networks essential to build community resilience (Murphy, 2007).

3.3 Methodology and Methods

Since my main objective was finding out community and emergency actors' perceptions about emergency management, the qualitative descriptive methodology suited my research as it relies more on words and documents which will substantiate the findings with this design (Bogdan & Biklen, 1982). Wall (2006) also adds that the concept of engaging with participants in story telling is a culture embedded in emergency services, and it is a powerful medium for replicating and improving that culture.

I took the stance of being a constructor of knowledge based on the assumptions that humans construct an understanding of reality through their perceptual and interpretive faculties (Rallis & Rossman, 2011). I utilised focus groups and key informant interviews as data collecting methods. The results provided a basis to illustrate, support and challenge the theoretical assumptions on effective community emergency planning which I have used as a theoretical framework in this study (Morgan & Lifshay, 2007). Emergency management literature also attests that perceptions of the relationship between people and sources of information influence hazard preparedness, and that trust in civic emergency planning influences preparedness decisions (Paton, 2007).

Observations and taking pictures during the data collection were other data collecting methods employed. Field notes and a photo diary enabled me to illustrate the current challenges within the Gadzema community. Pictures are important in research and are an important resource in elucidating the *public life* (Denzin & Lincoln, 2005).

Focus groups are group discussions organised to explore a specific set of issues such as people's views and experiences (Kitzinger, 1995). The method can also generate a depth of understanding about public health problems, community strengths, and potential interventions that have local meaning and utility (Stevens, 1996). The sessions were conducted in a relaxed fashion with minimal intervention from the facilitator but I did interject to encourage participation and debate amongst participants. Kitzinger (1995, p.299) notes that focus groups “reach the parts that other methods cannot reach” revealing dimensions of shared understanding and observation that often remain untapped by the more conventional one-on-one interview or questionnaire. Two sessions were conducted on different dates and audio recorded. Each session lasted approximately 90 minutes with 8 to 10 participants. Community health workers assisted in the study by delivering letters of invitation in the community and members of the community came forward to participate. Participants were from Gadzema and ranged from, but were not limited to, family heads or guardians, small scale business owners, church leaders, teachers, to any community leader over the age of 18 years.

Key informants were identified purposively as those who were involved in the cholera outbreak. According to Goetz and LeCompte, 1984 (as cited in Miller, 1999) key informants are individuals who possess special knowledge, status or communication skills, who are willing to share their knowledge and skills with the researcher and who have access to perspectives or observations denied the researcher in other means. Participants invited included local authority officials, Ministry of Health and NGO staff and other stakeholders as highlighted in Table one. Semi-structured questions were used to gain an insight on cholera planning and implementation during the emergency in Chinhoyi. School Health Masters who are school teachers responsible for health education for pupils were also interviewed as key informants so as to assess the roles of schools in planning and response to a local emergency. Only one School Health Master was interviewed and the other was not available during the study period. All interviews were conducted at the participants' workplaces and sessions lasted 90 minutes on average.

Table 1. List of Key Informants

Participant numbers	Organisation /Institution	Designation	Method
1	MoC	Environmental Health Officer	Interview
2	MoH	District Environmental Health Officer	Interview
1	CARITAS	Programme Coordinator	Interview
1	Red Cross Society	Programme Coordinator	Interview
1	MoC	Community Health Worker	Interview
1	Community Working Group on Health (CWGH)	Programme Coordinator	Interview
1	Chaedza Primary School	School Health Master	Interview

I also looked at documentation that was made available during the study period which was relevant to the emergency. I acquired cholera statistics from the Ministry of Health that detailed the cases, deaths and mortality rates reported in Chinhoyi over the outbreak period.

3.4 Field Study

My selection of the area to research was influenced in part by the unique but not unusual pattern of the 2008 outbreak. As noted earlier the 2008 outbreak was mainly prevalent in urban areas and had higher case fatality rates (Mason, 2009). With that background knowledge of the phenomenon, I decided to choose an urban residential area in Chinhoyi, Zimbabwe. Chinhoyi is the provincial capital of Mashonaland West in Zimbabwe where I come from and has a total population of approximately 60,000 residents. Its economy is chiefly based on agriculture and, historically, copper mining which has since shut down. Chinhoyi was one of the towns in the 10 Provinces that was badly affected by the cholera outbreak and by November 2008 had a total of 75 people affected, and 12 deaths recorded (International Federation of the RedCross, 2009).

The Gadzema section shown in Figure Six is one of the town's oldest urban high-density areas and was established in the 1960s according to the municipal records. It is predominantly occupied by low income earners who are industrial employees or small scale business entrepreneurs at a nearby market place. Its population is approximately 2,500 and the size of occupants has either doubled or tripled according to local officials resulting in overcrowding. The community's mortality rate was difficult to acquire since

case reporting is not captured at Ward level; only the total number of cases for Chinhoyi are reported to the Ministry of Health.

Historically the area was built to accommodate labourers at the industries located in the east on the map shown in Figure Six. There has been very little development made to its infrastructure although the household numbers have increased. Other residents are employed at the industrial area and some are not in employment but engage in informal trading. Gadzema's economy is based on vegetable and crop sales at a nearby market place and informal trading from a nearby shopping centre and a bus station. The market also offers employment to other residents. Today some of the houses are still occupied by the same residents who first occupied the houses in 1960s as well as others who occupied them at a much later stage. Therefore there are a considerable number of aged occupants within the section.

Figure 6. Gadzema Section from Google Maps 2011



Houses are built from brick while others are built from thin cement slabs and are commonly known as the *single quarters*. This term refers to a housing unit which is divided into two, with each half having two rooms. These were built to accommodate

the single workers. The yards are around 200 square metres and have a small garden and front-yard space. A system of piped water has been installed since its establishment and some houses (especially the single quarters) share external community toilets which are separate from the main houses and have with six squat holes and at least one washing tub (See Figure Seven.)

Figure 7. Gadzema Community Ablution Block, 2012



A municipal clinic is situated south-east of the residential area catering for approximately 30,000 people surrounding Wards 3,4 and 5 of Chinhoyi; Gadzema is the fourth Ward. There is a Salvation Army church within the residential area; it is located within the heart of the community, although the ratio between Christian and non-Christian is unknown. Some of the community participants reported belonging to that church and others belonged to different denominations and religions. Another religious sect in the community believes in religious healing; it is commonly known as the Johanne Masowe sect and its members do not seek medical treatment. The roots of such beliefs are supported by Knapp van Bogaert and Ogunbanjo (2009). They note that ancient Mesopotamians believed an individual god ruled each body organ, just as they believed in a multitude of gods interacting as forces in their daily lives. Thus, should an

organ become diseased, it was necessary to pray and sacrifice to appease the offended god. If by chance it healed, they offered further prayers and sacrifices. In order to understand their perception on emergency preparedness and management, I also invited participants from this group to take part in the study.

Water and sanitation problems are a common feature for the Gadzema section. Due to overcrowding and inconsistent servicing of the water and sewer pipes it has resulted in constant sewer blockages and burst sewerage pipes within the residential area. Water supply for the town has also been worsened by the frequent power cuts due to the economic crisis which has forced the power company to ration power supplies in almost every town in Zimbabwe. Unfortunately more frequent and longer power cuts are experienced in the high-density suburbs. Water treatment plants rely on electricity to pump and fill two main reservoirs but due to the power rationing, water supplies have become erratic. Rubbish dumps are also a common feature due to the inconsistent bin collection by the Council and in some instances due to the absence of a rubbish receptacle. Two schools, Chinhoyi Primary and Chaedza Primary, are close to the community and also share water and sanitation problems.

Table 2. Community Participants

Participant numbers	Community designation	Method
2	Teacher	Focus Group discussion
3	Market vendor Committee member	Focus Group discussion
6	Community Health volunteers	Focus Group discussion
8	Small to medium scale business entrepreneurs	Focus Group discussion
2	Traditional healer	Focus Group discussion
2	Church leader	Focus Group discussion

3.5 Ethics

The complexities of researching people's lives and placing their accounts into the public arena raises multiple ethical issues for the researcher and approval has been premised on the notions of protection, confidentiality and anonymity (Mauthner, Birch, Jessop, & Miller, 2002). Before conducting the data collection, permission was granted from AUTEK Auckland University's Ethics Committee on July 21, 2011. AUTEK is

also guided by key principles which include informed and voluntary consent, minimisation of risk, social and cultural sensitivity, including commitment to the principles of the Treaty of Waitangi and confidentiality. These principles are amplified in the following list:

- **Informed and voluntary consent:** All participants in the research were informed of the research aims and objectives on their information sheets which also clearly informed them that participation was voluntary and they are free to withdraw from the study at any stage with no penalties. The researcher also notified the participants via the consent form that any information that was provided and recorded was going to be used only for research purposes and would be destroyed after data collection. All consent forms were signed by the participants and each one retained a copy.
- **Minimisation of risk:** I advised all participants in the focus groups and key informant interviews to notify the researcher, where possible of issues or concerns they felt uncomfortable to discuss before and during the interactions.
- **Social and cultural sensitivity:** I had initial contacts with the relevant local authority as part of consultation to ensure that the research was appropriate and acceptable. A written proposal to carry out the research was sent to the Municipality of Chinhoyi which promoted partnership, community participation and continuity. Questions for the focus groups and interviews were translated into Shona the local language which also encouraged full participation for the participants. Permission was granted from the Municipality of Chinhoyi and the Ministry of Health to conduct the research in their town.. The Ministry of Education also granted me the permission to conduct my research with the School Health Masters.
- **Confidentiality:** Participant responses from focus groups and interviews were audio recorded; their signed consent forms were stored under lock and key to ensure information remained confidential. Note taking was also done simultaneously. Names and ages of participants were anonymous by employing a coding system. All recorded and noted information will be deleted and destroyed on completion of the research.

3.6 Data Analysis

As themes emerged from the data collected, I carried out a rough thematic analysis as defined by Anderson (2007). This involved the grouping and refining of the key themes which emerged from the summarised data, which in turn gave meaning and expression to the collective voices of the participants. The thematic analysis was informed by the theoretical framework of the ladder of community participation presented in the second chapter. I carried out the analysis by analysing field notes and grouping important points together as the research progressed. Power supply was not sufficiently reliable to use electronic means. The following steps were used to synthesise, summarise and analyse the data:

- Each type of data from the interviews and focus group discussions was transcribed into an organised text.
- The text was read several times in order to understand the contents of the data,
- Data relevant to the inquiry was highlighted and grouped together, with reference to the ladder of community participation, to form themes and labelled under key words or phrases from the participants' responses. In addition themes were divided into before, during and after the outbreak.
- Emerging relationships between themes were identified and used to structure the text into a coherent whole.
- A discussion of themes was done in relation to the relevant literature discussed earlier on, the military and community participation models.

3.7 Conclusion

Perceptions about emergency management are important in building community resilience and building risk communication programmes (Renn, 2010). Although the research was focused in only one low socioeconomic community, the concept provides other avenues for research such as comparing perceptions and roles in the low-density residential areas with perceptions and roles in the high-density areas. Emergency management has to address the concerns of the affected public and find policy options that reflect these concerns (Renn, 2010). Other research, such as gender issues, could be explored to complement this research. My role in the study was not that of an outsider but as a member of the community and an active participant in the cholera outbreak. While this helped to make sense of what community and key informants had to say, there may be some disadvantage in that I found it difficult to look at the issue with fresh

eyes. Detailed data from the focus groups and key informant interviews are presented in the next chapter.

Chapter 4: What the Gadzema Community Members Said About the Cholera Outbreak

4.1 Introduction

This chapter presents the data gathered from community focus groups and interviews and is structured into the three phases of the outbreak; before, during and after. The phases are significant in providing a chronological account of the roles and actions of community and institutions through the course of the outbreak and, importantly, analysing how the community participated in the outbreak phases. It is also appropriate to adopt a historical perspective as it shows the dynamics of an emergency throughout its chronology and its impact on the community (Ritchie & MacDonald, 2010).

4.2 Gadzema Community Before the Outbreak

At the beginning of the focus group sessions I asked the participants this question: “What knowledge about cholera did you have before the outbreak?”

The question was deliberately posed to explore the community’s knowledge about the disease and to discover what, if any, factors may have hindered access to information on health matters in their community. Here I present what participants had to say about that period. I also draw on my personal experiences as an Environmental Health Officer during that time to inform the analysis.

In general, the picture of Gadzema before that outbreak shows that there were weak communication links to integrate community health matters in collaboration with the local authority, the Municipality of Chinhoyi, and other organisations. The lack of active consultation and information sharing between the local authority and the community resulted in a lack of knowledge about cholera. This was evidenced by participants who tended to rely on memories of health education from primary school, parental advice and rumours for their knowledge of cholera. Information from these sources basically focused on prioritising hand-washing practices to prevent cholera but not explicitly detailing the severity of the disease.

One participant explained how they knew about cholera before the outbreak and said,

Cholera... I knew about it from Primary school. I just remember we were told by our teachers to wash our hands before eating and after going to the toilet. They said otherwise you will get Cholera. (Youth, Group2)

Others remembered how they were told about the disease by family members and responded by saying,

Our parents used to be strict on us not to eat fruits or food without washing our hands because they told us cholera kills. (Youth, Group 1)

We were taught to wash vegetables thoroughly before cooking them and eating warm food all the time (Market Vendor, Group1)

In a second focus group meeting, one participant narrated his cholera experience at a farm outside Chinhoyi (KwaBere Farm) where an outbreak had once occurred in 2006 and killed several people. In his story he said,

...at first people did not understand that it was a disease because of its short time period before one died. I was also strongly convinced like everyone else that it was witchcraft. (Youth, Group 2)

Although most participants felt that there was not enough health-promotion education from reliable sources, it should also be remembered that cholera had been experienced only in farm areas around Chinhoyi and that it was relatively a new experience for many urban residents. Some community health-trained volunteers expressed their thoughts and said,

We were trained on educating the community on Cholera but we didn't speak much about it in our Ward because we did not see the immediate need to talk about Cholera since it had never happened in Chinhoyi. (Volunteer , Group1)

To reinforce the point that cholera was a new experience, some group members said they knew cholera was commonly rumoured in other countries such as Mozambique and Zambia, but they did not expect it in their country, let alone in their town.

As well as asking focus groups about levels of knowledge on cholera before the outbreak, I also asked about how they planned for emergencies in their community. I asked the following question: "How did you plan for emergencies in your community. How and what media were used to communicate health matters?"

Most participants agreed that they were not involved or consulted for any community planning for an emergency with the Council or any other health authorities. Health planning showed that it was clearly the Municipality and Ministry's responsibility. Most participants agreed when one of the participants said,

We never held meetings to discuss community problems as far as I know. We only got together for cholera meetings when there was cholera. (Traditional healer, Group 1).

The discussion of the time before the outbreak elicited more information on the challenges the community faced than answers about how they were engaged in planning for emergencies. I then asked the following question: “What challenges were you facing which you think might have contributed to the cholera outbreak?”

Participants explained how water and sanitation issues were problematic and how sourcing water was a challenge when it was unavailable. One participant said,

Water availability was bad, we had to queue at few sources from some of our neighbours houses where supplies would run out last. We didn't have enough buckets to store enough water so it was a challenge to store water for washing, toilets, bathing and cooking. One way or the other you had to compromise one or two of the water uses. (Parent, Group1)

Some ended up going to (Karwizi) a stream along the road to the Municipal water tanks and some people fetched water from that stream for washing- but no one really knows what the water was to be used for when they got home. (Youth, Group 1)

In my experience as the Environmental Health Officer before the outbreak, the Local Authority did not promote active community participation planning for emergencies. To foster such community involvement in partnerships with local authorities, community members have to be actively involved (Bracht, 1999). Community consultations were rarely held as participants expressed that there was no consultation or involvement in planning for community action. This was a clear indication of leadership gaps to initiate and direct effective engagement on the part of the local authority. On the other hand, water rationing left most residents with limited options in sourcing water. Ideally the Municipality ensures the provision of safe water supplies. For example, using water bowsers but due to limited resources and finances, it was a challenge.

4.3 Gadzema Community During the Outbreak

I then moved on to ask the question about the period during the outbreak. I began the discussion by asking: “How were you informed or alerted about a Cholera outbreak in your area?”

Community members agreed that intense health promotion campaigns began during the outbreak and greatly improved their knowledge on cholera. However, despite increased awareness, the participants identified potential health hazards that exposed them to risks of cholera. Major problems in water and sanitation were still being experienced which required more substantial programmes. The trend in health education during the outbreak utilised a mix of formal and informal social structures to convey

health matters to the community. Informal social structures that were utilised included open space announcements by the local authority, door-to-door education campaigns and dramas. For example, a fruit and vegetable market vendor said,

I remember seeing the red Council vehicle with a loud speaker moving around announcing about cholera at the market place and in other Wards. (Fruit and Vegetable vendor, Group 2)

Dramas were also used as informal methods for conveying messages to the public. One of the youths present spoke of how they were recruited and trained as part of a community volunteer drama group by a local NGO, the Catholic Development Commission (CADEC) in partnership with Municipality of Chinhoyi.

We were a drama group well known in Chinhoyi and CADEC approached one of our leaders and told us to come to the pastoral centre to be taught about cholera. We learned using pictures and talked as a group with the CADEC people until we came up with a drama about what happens in our day to day lives at home. So some things that we were trying to tell people is not to shake hands at funerals, washing hands before eating and to go to the camp as soon as you passed out watery diarrhoea.”(Youth, Group 1)

Community health volunteers also said they were involved in active contact-tracing¹ in partnership with other health promoters from the Council. They noted that door-to-door health education approaches were used to educate people on cholera and personal hygiene. Discouraging the socially accepted culture of shaking hands to console the bereaved at funerals was also expressed by community volunteers to be well received through the door-to-door visits. The community volunteers present said,

As community health volunteers we visited places where community deaths occurred and also where cholera patients came from. We told people not to shake hands during funerals and taught them how to keep their homes clean and also how to store water safely. At first it was not an easy task to ban handshaking as it has been our culture to say sorry to those who have lost a relative or family member. We also taught in churches and when they held functions and advising people not to share water in a bowl when washing hands but to wash with running water or (kushurudzira) pouring from a container. (Volunteer, Group 2)

Formal structures such as primary schools were utilised to convey cholera messages to children. Teachers from the two sessions expressed how they prioritised health matters as part of the pupils’ curriculum targeting cholera.

In schools, we educated children to be aware of the disease. Drama groups provided information on the disease. In classes, we used the ‘bucket system’ that had a tap and every child had to wash hands after using the toilet in class.” (Teacher1, Group 2)

¹ Identification of those persons who have had such an association with an infected person, or contaminated environment as to have had the opportunity to acquire the infection.

During breaks, we made children to eat together in class and they would wash and drink at the same time. (Teacher 2, Group 1)

Problems of water and sanitation in schools remained a challenge as one of the teachers explained that each child was encouraged to bring at least a two-litre bottle of water every morning to fill up the school containers which were used for storing water to clean the toilets, for drinking and other uses at school. The picture from the photo diary in Figure Eight shows the morning routine of pupils bringing water from home to a school near the community.

Figure 8. Chaedza Primary School Pupils Carrying Water to School From Home. (2011)



(Note: the picture was taken during the data collection period and the water problem still persists.)

A few participants indicated they had health education sessions within their respective social clubs such as the men's social football club which emphasised personal hygiene. One of the community health volunteers said that cholera education for women was mainly communicated in churches and in clubs that included both men and women, especially during the health programmes for People Living with HIV/AIDS (PLWH).

However most participants said churches played a significant role in mobilising and educating the community on cholera during the outbreak. Participants said,

At church time, we are told about the dangers of cholera and how to look after our families. We were also given aquatabs and were also shown how to mix the tablets in the water. (Parent, Group 2)

While others said,

We were taught in church not to shake of hands even kubata maoko² during funerals. (Parent, Group 1)

However even though churches were formal conduits within the community to rally people for cholera education and awareness, one religious sect was mentioned to have strong beliefs on spiritual healing and did not seek medical attention during the cholera outbreak. The sect is known as Johanne Masowe the name of a prophet who led the church and claimed to have been healed by the power of God after years of health ailments (Mukonyora, 1998). This sect believes in spiritual healing and participants said they did not and still do not seek medical treatment for any ailment. One of the participants said,

It's unfortunate that there isn't any Johane Masowe person in this group but this sect believes in spiritual healing and they did not go to the clinics or Cholera Treatment Camp (CTC). Some people we knew ended up dying. (Resident, Group 2.)

One of the apostolic sect members had cholera and died during the outbreak and another member from the same sect also got infected by it and went to the CTC to seek medical treatment and was treated. He also ended up advising some of his Sect members that they should go to the hospital and be treated and then come back to church to ask for forgiveness (Community health volunteer, Group 2.)

I then asked participants how they organised action within their community to respond to the cholera outbreak: "How did you organize yourselves to respond to the outbreak?"

Collaborative efforts between the Council and NGOs further improved community health issues as community volunteers noted that NGOs in the town offered transport and drove them from Ward to Ward around Chinhoyi conducting door-to-door health education and distributing non-food items such as soap, aquatablets³ and buckets.

We went into households and educated people on how to maintain household hygiene. And also informed people on how to prevent cholera transmission in places where there were sewer bursts or blockages. (Community health volunteer, Group 1)

² The act of shaking hands as a way of consoling the bereaved at funerals.

³ Water purification tablets.

We also used to give health education in our churches on using other methods of washing hands and washing dishes by using ash in place of soap. (Community health volunteer , Group 2)

It was clear that in some ways there was collaboration between the community, the local authority and the NGOs to organise for action. For example the training of community members to be health promoters and the NGOs zeroing in to provide transport to increase the coverage of health campaigns resembles the bridging concept from the community participation ladder. Intersectoral efforts were demonstrated as a diverse health workforce teamed together.

Some participants also noted that the Councillor organized community members to conduct Ward clean ups and recruit health volunteers. One participant said,

We held community clean ups with our Councillor together with the Trailer and Tipper from the Council. We did *Mushandira pamwe*⁴, especially during the weekends. (Youth, Group1)

Other participants noted that Councillors selected community volunteers in their Ward. Selected members also took part in the health training with other health promoters from the Council. However some community members had mixed feelings about the selection process.

We were selected by our Councillor to be part of the community health volunteers and we also attended training workshops at the Roman Catholic Centre in Coldstream. (Community volunteer, Group2)

...however some of these community volunteers were selected out of favour from the Councillor and at times because they were from the same political party. (Teacher, Group 1)

However in the height of intense health education, some had mixed beliefs about the cause of the outbreak in their community. There was a mix of myths and religious beliefs that challenged health education efforts so I asked the participants, “What were some of your beliefs or thoughts about the cause of deaths in the community?”

Participants pointed out a number of beliefs and myths that they associated with the alien cause of death and most issues raised were linked to witchcraft, rumours of food poisoning, food shortages associated with the economic crisis and other reasons linked to inappropriate fish harvesting. Participants responded saying,

I remember how fish was all of a sudden banned to be sold at the market and people were saying that fish had brought in cholera. (Vendor, Group 1)

⁴ Working together.

Even the Municipal police came and raided dried and fresh fish in the market place together with the National Parks team and we all believed fish was causing cholera. (Vendor, Group 2)

Some believed that fish was not the cause of cholera but other factors had contributed to that line of thought. One of the teachers responded and said,

I remember that there was a rumour that some fishers from Biri dam, used chemicals such as paraquat⁵ to harvest fish. So there was a general assumption that fish was causing diarrhea which also occurred at the time when the Cholera outbreak came and hence the association. (Teacher, Group 1)

The association of Fish and cholera is not entirely a misconception as most literature on cholera agrees that aquatic animals especially fish and crabs are potential hosts of the bacterium *Vibrio cholerae* (Acosta et al., 2001; Campbell, McIntyre, Tira, Flood, & Blake, 1979).

Other participants noted that their initial thought for the diarrhoea in their community was caused by food poisoning as a result of food shortages which forced people to eat unpalatable foods. One of the participants said,

In that year (2008), we had very little options when it came to what we ate, so people ate anything and hence suspected that it was the types of foods eaten. (Parent, Group2)

Apart from myths and beliefs, there was a general fear of the disease by the community as some participants acknowledged in their stories,

I have an uncle of mine who died from cholera during the outbreak and he was only wrapped up in a plastic and body viewing was not allowed. We pleaded with the health officials to at least lay his suit on top of his body so that he went in dignified clothing (Resident, Group 2)

Sometimes even the way people would talk about the deceased cholera patient in the community, they would say you were not allowed to body view and they would wrap the dead in a plastic, and this really made us fear so much about the disease. (Youth, Group 1)

Some even feared to visit the CTC to seek medical attention as one of the participant's mentioned;

We feared the disease and hesitated to go to the cholera camp because people had died from the camp and to us it seemed like the death place. Some people did not go for that reason. (Fruit and Vegetable vendor, Group1)

A mix of fear of the disease was expressed by participants mainly because of its short incubation period and because of the preventive measures during funerals was

⁵ Paraquat is a toxic chemical that is widely used as an herbicide (plant killer), primarily for weed and grass control. (CDC Fact sheet, 2006)

unusual with the sociocultural norms for example, shrouding which is the concept of covering the dead in a body bag to avoid fluid flow into the environment. This experience demonstrated that the community members became aware of the disease not only from health education but from personal experiences.

It was noted that the collaborative efforts between the community, the NGOs and the local authority intensified health education and raised more awareness. However the extent to which the processes were left to be community owned was uncertain. For example, community volunteers were identified through Councillors as some participants explained the recruitment process. Some of the participants expressed their concerns over the selection of volunteers and highlighted issues of partisanship and nepotism which can affect the social capital for other community members to participate in health programmes.

4.4 Gadzema Community After the Outbreak

The general picture of the Gadzema community after the outbreak indicated that there were still water and sanitation challenges even though the outbreak had ended. Community collaboration with the local authority and other organizations was slowly becoming latent as most NGOs withdrew. I then asked questions that revealed the nature of preparedness measures being taken so as to avoid another outbreak within the community. I asked the following question: “How did you or how are you contributing to your community to avoid another outbreak or emergency?”

Participants expressed their appreciation for the partnership by NGOs and the local authority in providing them with boreholes as an alternative source of water (Figure 10 p.64) even though water and sanitation challenges still loomed. They explained how resources such as aquatabs and buckets had enabled them to practice important personal and household hygiene principles to avoid another community outbreak.

Refuse collection was noted to have improved during the outbreak but after the outbreak it became inconsistent once more causing the number of illegal dumps within the community to mushroom. Figure Nine shows one of the dumps I observed during a community visit. Some of the participants said,

We are practising waste separation at home but because the refuse truck sometimes doesn't come, people end up dumping on the road sides. (Resident, Group 1)

We even held clean-up campaigns within our ward and removed some of the dumps at one stage after the outbreak. (Entrepreneur, Group 2)

Figure 9. Dump on the Roadside due to Inconsistent Collection in Gadzema.



The next question I asked was in relation to the community's partnership with local authority: "Do you feel you share responsibility with the local authority at this stage after the outbreak?"

Participants expressed that they did not feel like they were in partnership with Council. They had concerns over water issues which they felt were not fully addressed. One participant said,

We need to know why water is still a problem when other places have water and we hear that GAA⁶ replaced other pipes for water supplies. (Resident, Group 2).

Furthermore, participants had complaints over the water billing system which they stated was too costly considering that water was being rationed. The community indicated that they lacked a solid platform to address health matters with the local authority. Here are three responses from some of the participants,

⁶ German Agro Action is an international NGO specialising in water treatment and the rehabilitation of water works.

Gadzema has a lot of people and interms of income we have very low incomes and so to afford some services from council...it is a challenge. Especially the water bills are so high... But we wish Council revisits the bills and cancel the previous debts and start afresh. (Resident, Group 1)

Problem started when the currency changed to the US dollar and converted the bills. They are too high for us to pay back the bills, so now the debts will be there for years to come because we do not have enough money to pay back the bills. (Community health worker, Group 2)

We wish if they could freeze all the previous debts and start afresh the billing for us to keep up to date with the payments. (Resident, Group 2)

I further asked participants what they felt may have been ideal for them to solve problematic issues after the outbreak and they highlighted several community groups which they felt could be sources of leadership to steer community leadership. Formal structures such as the Chinhoyi Residents Association (CRA) and the Ward Development Committee were identified by the participants. However, these structures were affected by political partisanship which, as participants noted, led to their disintegration. Communication between the community and the Municipality remained a challenge as one participants said,

We were not sharing ideas with council but we have to work together with them even after the outbreak. Why can't we have dialogues like these with Council and other relevant authorities? (Traditional Healer, Group 1)

The concern from the participant clearly indicated the lack of effective partnership with the local authorities. There is still need for a communication platform to facilitate partnership from both parties. On the other hand, while cholera awareness was said to be declining within the community, health education in schools was being reinforced as one of the teachers explained:

We have put more emphasis on Health education to our pupils and consistently have dramas and quizzes as part of the curricula. (Teacher2, Group 2)

However water and sanitation issues are still problematic and children are still required to bring a two litre bottle of water each morning as shown in Figure Eight.

Other participants indicated that there were other community resources that could have been utilised to enable the development of their community in light of cholera management. One participant said,

If we had a committee we would have wanted our unemployed children to be taking part in the cleaning up of our community especially clearing the dumps and the water drains that are a problem in our ward. (Resident, Group 2).

Figure 10. Borehole Provided by GAA, 2011



The idea of collaboration only intensified during the outbreak and ended when cholera was brought under control. Ideally the bridging relationship between the community and local authority and other organisations would be expected to continually support and direct communities to initiate action within their community. Continuity of authority is not only assumed during an emergency but even carries over after an emergency (Dynes, 1994).

Water and sanitation was improved through the provision of buckets and jerry cans for safer water storage by the NGOs. This also improved household and personal hygiene. A borehole (Figure 10) was also provided by an NGO German Agro Action (GAA), to supply water for the community. However the use of aquatabs slowly declined; participants indicated that it had a strong unpalatable taste and smell of Chlorine. Other participants reported that the tablets were eventually used for other purposes such as bleaching instead of water disinfection.

Chapter 5: Key Informants' Perceptions on Cholera Management in Chinhoyi

This chapter presents the perceptions of the institutional actors (referred to generically in the text to protect their anonymity - see ethics section in chapter 3⁷) involved in the cholera outbreak in Chinhoyi. The presentation paints a picture of the coordination and collaborative efforts of the actors from their perspectives, and indeed from mine given that I was one of those actors, and analyse how the Gadzema community was engaged in the three phases of the outbreak: before, during and after.

5.1 Before the Cholera Outbreak: Issues of Preparedness

From the participants' responses it appears that emergency planning within Chinhoyi before the outbreak was confined to a top-down management approach with minimal community consultation. Moreover planning efforts between the Ministry of Health and Municipality of Chinhoyi were different from those of local NGOs. Yet the literature suggests that planning for emergencies should be multisectoral with organisations working together inclusive of vulnerable communities (WHO, 1999). Here I present perceptions from the key informants in relation to their preparedness efforts for Cholera before the outbreak. The first question posed in interviews was: "How did you communicate health hazards within your organisation and with other organisations? How did you communicate them to the community?"

One of the key informants explained that it was the Municipality's responsibility to oversee urban health issues and for drafting the emergency plan with input from the Ministry of Health. The informant said,

Health information and hazards notification was communicated internally before the outbreak through report writing within the department and presented to other departments. Usually other organisations such as the Ministry of Health were communicated to when there were resource shortages...Communities were informed about health hazards by Health Promoters in each ward as part of their daily health promotion duties. It was usually done in schools and at community household level teaching communities on maintaining basic personal and household hygiene. Weekly feedback reports were prepared and sent to the Director of Health Services. (Key Informant , A.)

The key informant also indicated that Health Officers and technicians in the Ministry of Health had the planning role for emergencies with the Clinic, Fire and Ambulance sections being consulted for input to the planning efforts. The Engineering

⁷ Designations of key informants have not been included for the reasons of anonymity.

department from MoC was said to have been consulted for water and sanitation problems. This clearly indicated a misconception for emergency planning as it was confined within the Health section only. This lack of prior coordination between departments for planning ultimately influenced the response measures to the outbreak as shall be noted in the following responses.

Another Key informant, (*B*) gave a similar account noting that it was the Ministry's responsibility to oversee the health and social issues in communities in *Makonde*⁸ District which is mainly peri-urban and rural farmland.

We have the DHE (District Health Executive) and usually the mode of communication in relation to disasters is that the DMO (District Medical Officer) informs the Province through the PMD (Provincial Medical Director) and then the PMD talks to other stakeholder through the CPU (Civil Protection Unit). The DA (District Administrator) will contact all other stakeholders including NGOs, other Ministries including the Police and discuss. So the reporting followed the same pattern before the outbreak.

The response from informant *B* followed a hierarchy of reporting stages which resembled the typical nature of the top-down management style. The informant also noted that health education and promotion was imparted to communities through outreach programmes. Apart from the government actors, local NGOs were also interviewed. NGOs indicated that they have unique emergency planning strategies which differed from those of the government actors. Each of them addressed how they planned and communicated community hazards. One informant from a faith-based organisation involved in managing the outbreak, was interviewed.

NGO (*A*) didn't have much of involvement with the Municipality or Ministry of Health on cholera before the outbreak in Chinhoyi. We dealt with health matters independently under the organisation's auspices. We trained peer health educators, Home based caregivers and facilitated workshops utilising the Participatory Rural Appraisal methods to teach the community and most of our work was devoted to serving rural communities.
(Informant *C*)

Another informant (*D*), from a prominent NGO and a permanent member of the Civil Protection Unit (CPU) indicated that communication on community hazards before the outbreak was done through in-house meetings and meetings with the CPU which the Municipality is a member of at the District Administrator's office. The informant indicated that hazards related to cholera were known and well experienced by residents before the outbreak.

⁸ Makonde- is a District within Mashonaland West Province which is usually comprised of farm areas.

Community hazards are usually identified through Vulnerability and Capacity Assessments (VCAs) as indicators of vulnerability to respond to although in Chinhoyi we have not conducted these. Water shortages and sewer problems were matters known to us as part of our experiences as Chinhoyi residents so we discussed them in-house and made recommendations at the quarterly meetings at the DA's office.

A community-oriented, local NGO on the other hand, appeared to have closer networks with both the governmental actors in sensitisation programmes. The key informant (*E*) indicated that communication with other organisations was reinforced through health literacy efforts which aim to consolidate the work done through the Civic Education programme, identifying and filling gaps, as well as introducing innovative processes and concepts into the work. The informant said,

Communication about health hazards was shared at stakeholder meetings with the government personnel and other local NGOs. Through community literacy efforts, community representatives for example Councillors and other people from the community were invited to attend meetings to discuss community health problems and ways to mitigate them. Health education was conducted throughout the community with coordination from Municipal Health Promoters.

One key informant, a teacher from a local primary school, told of how they taught pupils about basic maintenance of personal hygiene although erratic water supplies resulting from a damaged water and sanitation infrastructure challenged hygiene practices.

Before the outbreak the only emergency education we taught and demonstrated to our pupils was about fire emergencies. The Municipality Fire Department regularly came and demonstrated fire prevention drills and how to use the fire extinguishers. Otherwise other health education taught was on personal hygiene. (Informant *F*)

The school informant said that he was not familiar with the government-initiated programme on Disaster Risk Reduction (DRR) for schools introduced in July 2003 (discussed earlier in Chapter Two). This lack of knowledge on important Government lead programmes to an extent indicated the lack of continuity of government leadership to marshal the DRR programmes in schools.

The next question asked of key informants was in relation to the planning of emergencies before the outbreak: "Was there any prior emergency planning or plan and how did the community participate?"

Most organisations indicated that they did not have documented plans in place before the outbreak as demonstrated below from their quoted responses. However some literature suggests that the presence of a documented plan for an emergency is not always adequate to ensure that organisations are readily prepared but it asserts that there

have been combined efforts to map out strategies that can be used in case of an emergency (Canton, 2007). Below are responses from key informants,

We did not have any documented plan but we relied on theoretical knowledge about cholera management”. (Local authority official)

We did not have any emergency plan to work with as Council. (Health Promoter)

For Chinhoyi, we were caught unaware because we did not have any plan in black and white or any document that was written as a District. Most of the planning happened during the cholera outbreak and we convened meetings as DHE members as the CPU and planned a way forward. (Government official)

There wasn't any plan not even from the CPU and it was more of speculation about the cholera. And there wasn't any clear delegation of roles in an event of disasters. (Local NGO official.)

There was no emergency plan and we based our response on reactionary principles. I don't think we were recognized as a CPU member or very much involved before the outbreak even though the CPU knew the local stakeholders within the Province. It's only after the outbreak that we were recognized as part of the CPU, so we never had a collaborated plan shared with the other organisations prior to the outbreak. (Local emergency NGO official)

Another NGO coordinator indicated that his organisation had a community plan although it lacked support for its efforts. He said,

A plan was there for our organisation as an NGO which identified the need for Health Literacy Training Programme. Community identified hazards in their Wards from the Literacy Programme. Cholera was identified amongst the community hazards by the community leaders.

My personal experience of the emergency planning was that there was a lack of skills in the area of emergency management. Documentation of an emergency plan detailing roles and responsibilities shared amongst key emergency stakeholders was not evident.

5.2 The Outbreak Phase: Response to Cholera

In response to the outbreak, key informants indicated that there was a swift coordination call by Ministry of Health and the Municipality which brought most organisations together. I asked the following question about the response to the outbreak: “How did you respond to the outbreak? How were resources mobilised?”

One key informant noted that their response as a local authority was swift as a result of the urgency to act. However the narration indicates that there was a measure of panic due to lack of knowledge on how to respond to the outbreak.

I remember we were informed by the Director that there was a Cholera outbreak in our town... I didn't have much knowledge on how to respond to an outbreak situation since it was my first experience. So I consulted my other superiors on how to go about the outbreak.

My personal experience as an Environmental Health Officer at this time was that most of the staff in the environmental health section were still new to working in the health sector or had just recently graduated from university. The knowledge of cholera outbreaks was based purely on theoretical knowledge. A good example was the response from one health officer who said cholera management was known only in theory. Since it was also a disease which had not been experienced for years in the town, most health staff at this time were new and hence lacked the experience to manage outbreaks. In general, the responses from the key informants indicated that there was a lack of planning skills before the outbreak and there was no organised way for the community to make a contribution. An urgent CPU meeting at the DA's office was called for stakeholders to discuss a way forward and it was the first meeting I had attended that discussed emergency planning in my three years of practice.

The key informant (above) continued and explained that urgent disease surveillance was conducted by the MoC, and MoH Environmental Health Officers and technicians. It was pointed out that, initially, the Ministry of Health was reluctant to chip in as they felt that it was the Municipality's responsibility to act on the outbreak.

A temporary quarantining place was identified and a Cholera Treatment Camp (CTC) was set up at Chaedza Hall (Council owned premises). CPU meetings were now conducted daily at the CTC. Other smaller treatment points called the Oral Rehydration Points (ORPs) were opened in surrounding areas where the CTC was far for other communities. NGOs like UNICEF⁹, GAA¹⁰, MSF¹¹ and Red Cross assisted in putting up tents and providing the cholera beds, setting up temporary toilets and water points, and provided water tanks and aquatabs.”

The Health Officer also noted that the Municipality provided grave spaces free of charge to facilitate prompt burial for the deceased victims.

A MoH informant reiterated the same response strategy, noting that a Rapid Response Team (RRT) was set up to conduct an active surveillance within the community.

DHE members would sit for meetings almost daily discussing on strategies about how to avert the outbreak utilising the available various expertise from the different

⁹ *United Nations Children's Fund*

¹⁰ *German Agro-Action*

¹¹ *Médecins Sans Frontières*

departments. Environmental health practitioners also reinforced the public health legislation inspecting all food premises and banned the sale of fish in the streets.

Cooperation and collaborative efforts between the Ministry and Municipality indicates that they facilitated the response and resource mobilisation. Moreover, there appeared to be an element of flexibility from the rigid top-down hazard notification and communication, as noted earlier, to a more holistic approach used to mobilise needed resources during the outbreak. Local NGOs were contacted by the Municipality as one programme coordinator explained:

We were contacted by the Municipality about the outbreak when things were out of hand ... (pauses) ... It was rather an informal and abrupt communication. We were called on to pledge resources needed amongst other stakeholders and we provided intravenous fluids, Doctors from Kutama St Ruperts, ambulances, maize and beans to be used at the CTC.

As for NGO (X), information about cholera outbreak came from its headquarters in Harare and they did not intervene much in the Chinhoyi community. The Programme coordinator said,

Cholera notification from what I remember very well was from our Headquarters Harare. The National Coordinator gave us the authority to proceed into the field to intervene for the outbreak. It was addressed to the Provincial Administrator but he wasn't available in office so we notified the PMD that we were assigned to intervene in Kariba and Hurungwe.

The programme coordinator also added that their organisation only set up a CTC, ORPs and interventions in other towns that had a higher number of cholera cases. However, NGO-trained community volunteers were made available.

For Chinhoyi it was only the support teams that were available which comprised of 10 volunteers who were given allowances of \$5/day for almost three weeks especially for outreach programmes. Dramas were used to convey cholera education which we commonly termed 'edutainment' and door-to-door messaging using IEC¹² material.

Other resources such as 5,000 litre tanks for the communities were provided by GAA and UNICEF and placed at the market and bus station near Gadzema (refer to Figure 11, p.73 showing a similar tank provided at Chaedza Primary School).

Some organisations were not financially or materially resourced but contributed in mobilising communities for health education campaigns. One NGO official explained saying,

¹² IEC stands for Information Education and Communication. For more information visit <http://www.emro.who.int/cah/communitycomponent-iec.htm>

As NGO (Y), we were ill-resourced and could not provide material resources but managed to offer participation in meetings, mobilisation of people - for example conducting the door-to-door campaigns in the community - and mobilisation resources from the business community for fuel coupons, food, plastics for covering the dead and even some cash donations.

I then asked the following question in relation to how the community participated in the response to the outbreak: “How was the community involved in response to the outbreak and how was the outbreak information conveyed to them.”

Informants agreed that the extended network of partners in response to the outbreak developed some level of teamwork. Health education in the community was said to have intensified. For example a Health Promoter pointed out that more emphasis was put on encouraging the community to report early to the CTC for treatment.

We involved volunteer health promoters selected by Councillors who worked together with Municipal Health promoters to spread the health messages on cholera prevention. The Fire and Ambulance section went around the Wards with health promoters announcing about the cholera outbreak using a hailer. Precisely we educated people on how to make salt and sugar solution, how they could identify cholera stools and report to the CTC immediately, how to treat their water using aquatabs and storing it safely. Dramas were conducted in Wards by trained community members in public places like the market place, at the bus terminus and in schools. (Council official)

The community was also described as being involved in Ward cleanup campaigns,

Community members were mobilised by their Councillor and Municipal health promoters and set aside a day during the weekends to work together to remove community dumps and clearing storm water drains. (Health Promoter)

An NGO official expressed the importance of utilising Councillors in mobilising the community and spreading the cholera message within the Ward. Door-to-door campaigns enabled the extensive spread of the cholera messages.

Communities were educated on Cholera prevention and some community volunteers helped to distribute the Non-Food Items (NFIs) which included buckets, soaps and aquatabs.

However this official noted that there were some challenges with the distribution of non-food items (NFIs) when they utilized community leaders and eventually the distribution process was led by the community members.

There was a discord in terms of coordination during the outbreak. Politicians wanted to gain mileage on distribution of NFIs. NFIs were initially channelled through Councillors but later we realised that in the distribution there were some activities that led to unequal distribution of NFIs which appeared to be a political move to gain support from public. We ended up directing the distributing of NFIs with community volunteers and other NGOs.

Other community roles were noted by a Municipal official who explained how the community was resourceful in responding to the outbreak.

I remember at one point we ran out of food at the CTC. In the first three to four months of the outbreak, the NGOs were providing food and everything. Then later, the outbreak had spread all over the country so it was difficult for these organisations to cater for each and every Camp. So they withdrew and the community was now mobilised to provide food. We would go to the market to collect some food stuffs for patients to eat. Some people even donated maize and beans for the CTC.

A school teacher interviewed explained that health education was intensified and school children played a unique role sustaining their water and sanitation needs at the time of the outbreak.

We had an assembly and informed pupils of the outbreak and had drama groups coming to act out the dangers of cholera. Absenteeism increased during the outbreak but we continued to teach our pupils in class about cholera. Water and sanitation was and still is our major problem although we are a Municipality-owned school. We had to ask children to bring at least two litres of water from home to fill up school containers to be used for cleaning and drinking. GAA provided us with a 5,000litre tank which we used at school and we had the NGO come and fill it up now and again. (Refer to Figure 11.)

When asked whether there was communication with the Council about the water and sanitation problems, the teacher explained that the Municipality was aware of the situation but never had planned a way forward except for meetings with the Councillors who emphasised on health education.

Figure 11. Chaedza Primary School Tank Provided by GAA, 2011



Note: The tank is filled with tap water when it is available using the hosepipe shown in the picture.

5.3 The Recovery Phase

During the recovery phase, from my experience and from the perceptions of the key informants interviewed, most local organisations had established a network together with the external NGOs. However a recognisable gap was felt after the withdrawal of external NGOs like GAA, MERLIN and UNICEF, leaving the previously ill-resourced local organisations to monitor the emergence of other cases. Community participation further narrowed down further to focusing only on community health education and promotion, and recruiting volunteers in Wards. The following questions were asked of the informants to ascertain the events that took place in the recovery phase of the outbreak: “What structures were put in place as preparedness measures for the town after the outbreak?” and “What are the future implications for cholera management?”

A Municipality official indicated that ten community health volunteers in each Ward were trained after the outbreak including the Gadzema section. When asked when

they last held training sessions with the volunteers, the EHO responded saying that training sessions had been last held in January of 2011. This as seven months from the time the interview was conducted.

In the last training session, the volunteers were trained on encouraging the community to maintain household hygiene and safe water storage using aquatabs. When they run short of aquatabs or need to notify us on community problems, they report to our offices in Gadzema section.

A Ministry official indicated that a formal meeting with the District Health Executive Committee was conducted which included the Municipality of Health to map a way forward to ascertain the likelihood of another outbreak. It was noted that a two-week cholera surveillance and monitoring programme was conducted within the Chinhoyi community.

Communities were informed to remain vigilant, keeping the environment clean and reporting any conditions which were unfamiliar to them. District Health staff were also trained on Integrated Disease Surveillance Response (IDSR) and cholera kits were acquired from the training.

Currently a draft of an emergency preparedness plan exists for the District which details a stock take of resources and strategies to respond to an outbreak. Similarly, a Municipal official noted that they had only drafted a stocklist in preparation for the next outbreak which was to be forwarded to donor agencies to provide them with needed supplies. However, the resource identification and mobilisation indicated it was to be led and driven in a top-down fashion with not much community involvement. Other literature suggests that resources will be often directed to the *felt-needs* of those in the community, and that health activities will be carried out more appropriately when community is given more control (Zakus, 1998). Therefore although there were preparedness plans drafted, they simply detailed stock levels and lacked the community's participation in identifying their needs and problems hence undermining the purpose of emergency planning.

On the same note officials from MoH and MoC indicated the importance of community participation although participation was only left to health education and promotion activities.

Communities also can participate and there's need to train other people from the community and to be helpful during an outbreak. People are actually willing to help out but its jus that they are not involved in planning. (Municipal official)

A MoH official also said that representativeness in the CPU was of paramount importance for future outbreaks.

I think in the CPU meetings, there should be a community leader to attend the meetings so that they highlight other community hazards for example Councillors and other influential leaders.

Another important social network that was noted by the key informants was the business community. Flexibility in terms of incorporating the wider community was noted to be key in managing future emergencies. For example an NGO Programme Coordinator said,

The business community needs to be part of the CPU. Currently I think they consider emergency management to be the responsibility of the MoH or MoC because we didn't get much support from them during the outbreak.

Another NGO coordinator expressed that there was still a need to draft a holistic plan with other stakeholders in case of recurrence of a cholera outbreak.

Chinhoyi as a town, we don't have proper mechanisms in place yet to respond to a similar eventuality like Cholera and we need to map out a plan together for better coordination.

Funding for one NGO has been channelled to marshal DRR programmes within the province under church auspices. It was noted that community-based Disaster Risk Reduction efforts were being incorporated into monthly meetings with home based care-givers and that the programme has become mandatory. Community volunteers are being trained and committees being developed at Ward level in the rural areas. The concept was yet to be introduced in Chinhoyi.

On the other hand, community health challenges continued to loom even after the outbreak as a health promoter stated:

Health education continued even after the outbreak. Water and sanitation problems still prevailed. Other issues such the cost of procuring a bin is far too expensive for an ordinary person in Gadzema (US\$25 each) and at times the refuse collection is not consistent due to breakdowns. Water rationing also continued. Importantly there was need to carry out a review with other organisations to share information on the cholera outbreak for the future but that has not happened.

In one school the School Health Master expressed his gratitude to the donors who provided the school with a tank for water storage. He indicated that there was no emergency plan drafted yet although health education to pupils continued. However, he said that water and sanitation were still a problem after the outbreak besides the school being Council owned. He said,

This is a Council school but looks as if they have weaned us, because they don't invest much for the school besides claiming to be the owners of the school. They are aware of the state of the school and we expect our concerns to be taken into considerations. There

was a recent meeting on waste management with the Council officers but they failed to answer to questions why the refuse was not being collected and we have begun to dig pits around the yard to put our waste but it can't be a long-term measure.

The School Health Master also indicated that there was a lack of representativeness in the CPU for school health matters. Furthermore he indicated that schools needed more support for prioritising health issues.

Other resources needed for Health are not readily taken up because there are other issues already budgeted for by the School Development Committee (SDC) and finances are not readily flexible. For example, Teachers were supposed to hold a waste management meeting to discuss the concerns over the schools hazards. The school was not able to provide for refreshments for the stakeholders hence the meeting was not done.”

An NGO Programme Coordinator noted that after the outbreak, even though they were not intensively involved in Chinhoyi, their organisation continued to train volunteers within the community but anticipated to having stronger branches - she referred to them as volunteer networks.

Vulnerability Community Assessments (VCA's) were not conducted in Chinhoyi but need to be done. The problem is that we don't have stronger branches that could sustain the town financially for us to conduct them. We are currently going into schools and universities to try and recruit stronger branches with potential leadership to rally community health matters...We continued training volunteers and still do.

The acting coordinator of NGO (*E*), highlighted that community networking had been strengthened at the peak of the outbreak but towards the end it seemed to phase out leading to inconsistent communication on health matters.

There was a strengthened community network which mobilised and distributed resources for example GAA, MoH, MoC mobilised and distributed soap and water purification tablets. Currently, I can safely say that after that action as a united front against the cholera outbreak ... it seems as if cholera issues have been quiet as if the cholera is not coming back. But I strongly feel that as we approach the rainy seasons, there has to be an action plan and meetings done to prepare for another outbreak.

For emergency preparedness, NGO (*E*) reported having IEC material available to be used for health education which is often distributed in the community. He mentioned about other challenges that could be ameliorated by coordination and collaboration with the MoC and said,

Assets such as community halls should be made available-free of charge especially for health education purposes but we are often asked to pay a fee by Council.

The informant above also expressed that *trust* was a major concern hampering their activities as a local NGO because the organisation had been questioned by MoC occasionally to ascertain the organisation's work. He said MoC seemed suspicious of

NGO (Y) in the community because of any possible political influence behind their work.

The key informants' responses have attested to the importance of information sharing and it has been concluded by various researchers to be a priority in disaster management (Bharosa, Lee, & Janssen, 2010). Poor information sharing poses negative risks which could have potential influence in coordination during the response phase of a disaster (Dawes, Cresswell, & Cahan, 2004). Community participation was also limited to health education in all the three phases of the outbreak which is not entirely congruent with the concept of participation. Participation involves communities in order to define issues of concern *to them*, making decisions about factors that affect them, formulating and implementing policies and taking action to achieve change (WHO, 2002 as cited in (Heritage & Dooris, 2009). However among the challenges of achieving participation, there are various factors including power, leadership and other social factors - which will be discussed and related to the community participation ladder in the next chapter.

Chapter 6: Discussion of Findings

6.1 Introduction

The previous chapter presented the perceptions from the community members and the key informants in Chinhoyi. This chapter will present the main findings from the focus group data and interviews. An analysis of the findings in relation to the ladder of community participation will also be presented in section 6.3. The main research question was, “What are community and local actors’ perceptions of the cholera outbreak in Chinhoyi and what are the implications for emergency management in future?”

The research was guided by the following objectives:

- To explore the community’s perceptions about cholera and the outbreak from Gadzema, the following questions were asked; What did you know about cholera before the outbreak?, What actions did you take in response to the outbreak?, What lessons can be learnt from the outbreak?
- To explore local actors’ perceptions of the cholera outbreak in Chinhoyi the following questions were asked; How did you respond to the outbreak and what actions did you take? How were communities involved? What lessons were learned?,
- To draw up recommendations for future emergency management based on the findings.

6.2 Summary of Findings

What were the community’s perception about cholera and the outbreak?

Community Knowledge about cholera

The findings from the focus group discussions indicated that the community understood cholera as a disease as they related it to erratic water supplies and the old sanitation infrastructure in Gadzema coupled with inconsistent refuse collection. However, it should be noted that before the outbreak knowledge and understanding of the disease was limited as indicated by participants’ beliefs and practices. Some participants revealed that other community members’ initial beliefs for the cause of death were witchcraft or food poisoning understood to be caused by food shortages at the time. These beliefs were important markers indicating the community’s knowledge about the disease and also paralleled findings from the Haitian outbreak. Grimaud and

Legagneur (2011) found that during the outbreak in Haiti there were general suspicions within the community that cholera was some form of curse or witchcraft affecting the community following the earthquake. Others believed that it was a *political disease* brought in by foreigners including the NGOs responding to the outbreak so that they could get more funding. In their study they concluded that these beliefs, if left unaddressed, could lead to distrust, resistance and potentially strong reactions to health interventions. The potential risk arising from such community beliefs is that the general misconception that cholera is caused by poisoning or witchcraft and not by disease makes it difficult to adopt preventive measures as they will be seen as useless against what they perceive to be an intentional attempt to kill them (Grimaud & Legagneur, 2011). For this study, since the focus groups were conducted with only a portion of the Chinhoyi community, it may very well reflect beliefs that could still exist within the community even after the outbreak. This finding elucidates how community rumours and beliefs need to be considered and not underestimated and overlooked.

A contributory factor in the community having only limited knowledge of cholera was that it was a new experience in their area. Some participants did not expect the outbreak to occur in their community even though they had heard about it occurring in other areas and neighbouring countries. This also negatively influenced trained community volunteers who did not prioritize cholera education: this also contributed to the community's inadequate knowledge of the disease. As the outbreak progressed however, community members expressed that their understanding of cholera and its severity was improved through the intensified health education campaigns.

The study also identified that religious beliefs had both positive and negative consequences for the community health interventions. Community participants identified a religious sect which resisted community health education during the outbreak and some of their members resisted seeking treatment at the CTC. The Johanne Masowe sect exemplifies how religion exerts powerful influence on community members even in emergency situations. During the outbreak, some community members were said to resist health education at household level by locking their families indoors. Other members of the same sect went to the CTC secretly and were reported to have repented in the church after seeking treatment. This is a major factor for health interventions which needs to be addressed for cholera and other infectious diseases within the community. However, on a more positive note, other

religious beliefs as found in the Christian denominations - promoted health education campaigns by devoting their Sunday worship time to health education.

Community rituals were still valued even in time of the outbreak. A general expression of discomfort and fear towards the burial process of cholera victims was pointed out. The unusual practice of shrouding of bodies and burying them within 12 hours contradicted with the community's norms of conducting funerals. Funeral gatherings are valued as a cultural practice but, in this case funerals were shortened and strictly monitored. The practice of hand shaking which is the cultural form of consoling the bereaved, was banned during the outbreak; but the community eventually accepted it by understanding the attendant of its risks of contracting cholera.

In addition to suffering, cholera is well known for causing widespread fear (Sepúlveda, Valdespino, & García-García, 2006). Participants explained how the community grew to fear for the Cholera Treatment Camp which they called "the place of death". A number of community members did not report to the camp because they thought they would eventually die if they were admitted. This phenomenon of community fear during the outbreak resonated with findings from research in the United States during the severe acute respiratory syndrome (SARS) outbreak. Widespread fear of being socially marginalised for SARS resulted people putting off seeking treatment or denying early clinical symptoms (Person, Sy, Holton, Govert, & Liang, 2004). Community fears, if not addressed, could cause high levels of widespread stigmatisation or enforce the isolation of a large part of the population.

What actions as a community did you take in response to the outbreak?

Community roles and attitudes in relation to the cholera outbreak

The importance of being a *community* was reflected in most participants indicating they depended on parental advice, primary education and community rumours for cholera knowledge. It was evident that community played a significant role in message sharing through their day to day living and experiences. In the times of water shortages community members helped each other and sourced water from their neighbours which is the whole essence of being in communion and sharing resources. During the outbreak, the community also donated food to the CTC from the fruit and vegetable markets. This finding also concurs with Ronan and Johnston's (2005) view that communities are essentially active participants in disasters. It is therefore important to

develop already existing social structures as they are necessary conduits for spreading health messages within a community and offer aid with locally available resources. On the other hand, the high dependence on informal sources for information about cholera indicated that there were inadequate cholera awareness programmes from reliable sources targeting Gadzema before the outbreak.

Community members were also recruited and trained as health volunteers by the MoC, NGOs and Councillors. The Councillor also organised the community to conduct Ward clean up campaigns on weekends although these programmes lasted only until the outbreak ended. Currently the community still faces inconsistent bin collection and the cost of acquiring a bin is still too costly for most Gadzema residents, aggravating the emergence of illegal dumps.

In schools, although water and sanitation problem persists, health education remains the chief cornerstone to maintain acceptable hygiene practices, along with utilising the donated tanks. The school pupils still provide water for the school by bringing two litres of water which is an unsustainable method for dealing with water and sanitation problems especially, at a school level. It is also potentially a risky option given the high chances of cross contamination from the bottle and the water given the unknown prior uses of the container, and the uncontrolled sources from which the water is drawn.

The current attitudes towards the outbreak reveal that most community members acknowledge that cholera is a disease which requires further interventions to redress existing water and sanitation problems. Despite Gadzema being an urban area, they recognised the importance of boreholes and how they contribute significantly in maintaining household hygiene. Interventions for purifying water using aquatabs indicated that there is still a need for consistent education on their use. Some community members were reported to complain that the tablets had a strong smell that led them to using them as a bleacher rather than a water purifier. Research into proper use of the tablets needs to be conducted.

Overall, participants highlighted the need to be incorporated into the planning phases for emergencies and also identified key community associations such as the Chinhoyi residents association (CRA) and utilising the locally unemployed youth in action projects within Gadzema. Programmes such as removing rubbish dumps, community clean-ups and projects for water supply were commonly suggested by the community as solutions to their urgent needs.

How did you respond to the outbreak and what actions did you take?

Key Informants' perceptions about the cholera outbreak

“We were caught unaware,” was the catchphrase from most key informant’s responses indicating that before the outbreak there was inadequate planning despite the knowledge of hazards existing within the community. Although planning was confined within management structures, there were considerable gaps which evidenced inadequate preparedness. Most of the stakeholders did not have documented emergency plans which confirmed a lack of pre-emergency strategies outlining coordinated efforts. This finding falls well short of what epidemic preparedness planning requires, which is the development of plans, training of personnel at all levels and in all sectors, educating communities at risk, measuring findings, and monitoring and evaluating them regularly (WHO, 2007). Furthermore, in accordance with what the Zimbabwe Civil Protection Act of 1989 requires, planning for emergencies is expected to be done at various sectoral levels: for example, the Education sector, local authority and district levels and provincial and national levels. All these levels are required to produce operational emergency preparedness and response plans which they activate during emergencies and disasters. For Chinhoyi, emergency actors could not provide documented emergency plans except for MoH which provided a draft of an emergency plan detailing a stocklist for the District Health area drafted by Health staff.

How was the community involved?

The MoC , MoH and the local NGOs indicated that they involved the community through health education campaigns. They also recruited community members to become community health volunteers. Most strategies targeted community members through engaging them in dramas, public announcements and door-to-door health education. In terms of emergency planning, most key informants agreed that community participation was not significant.

Other organisations especially some local NGOs and schools also felt insignificant as part of the Chinhoyi community and as emergency stakeholders. They indicated that before the outbreak they were not included as part of the CPU. The findings also suggest that other potential stakeholders may have been excluded or not recognised as potential stakeholders or inclusion in the CPU. This created the impression for some local stakeholders that emergency planning was the responsibility of MoH, MoC and a

few selected stakeholders who were CPU members. Coordination of resource mobilisation and mitigation procedures commenced during the outbreak. Informal and private stakeholders were identified - community market owners who offered food for the CTC, companies pledging required resources and private clinics and hospitals offering human resources and ambulances but this was a reactive approach rather than a pre-organised plan.

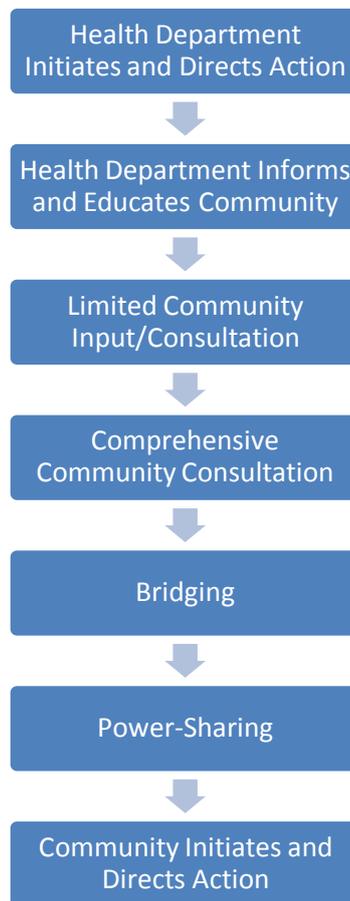
In a similar outbreak, findings from a study conducted in Haiti indicated that the lack of a regional preparedness plan incorporating private and public institutions across the Artibonite region contributed to the resurgence of cholera during the rainy season (Bien-Aime et al., 2011). In the same way, the absence of a holistic plan for Chinhoyi almost predicts an uncoordinated response to future emergencies and the risk of losing more lives. More importantly for Chinhoyi, the business community does not have a clearly defined role in emergency planning.

Lack of emergency management skills

Some personnel also noted the lack of adequate emergency management skills; rather, most key informants understood emergency planning to consist solely of stockpiling resources. These techniques continued to follow through even after the outbreak and currently the MoC bases its planning chiefly on stock counting and forwarding requests for donor funding. Responsibility for planning lay entirely with the Health department staff, yet planning should incorporate other staff and departments such as the Finance, Engineering and Social Welfare departments who have a direct influence on procuring resources, maintaining infrastructure and identifying community hazards. Other departments could also contribute to the overall preparedness by planning and drafting an emergency plan.

6.3 Analysis of Findings

By utilising the ladder of community participation (below), Gadzema's participation in the planning and response to the cholera outbreak was analysed against what the Health Department is expected to do when dealing with emergencies. Findings from the key informants were slotted into each of the phases of the framework and analysed.



The Ladder of Community Participation (Morgan & Lifshay, 2007)

Phase 1 and 2: Health Department Initiating and Directing Action/Education

In phases 1 and 2 of the ladder of community participation, communication about pre-event measures is a one-way and top-down process, i.e. from authorities to the community, with no community feedback required. The intention, is to inform and educate the community usually by using pamphlets, press releases public meetings and websites as methods of conveying the messages (Schoch-Spana, Franco, Nuzzo, & Usenza, 2007). For Gadzema, participants indicated that they lacked reliable information about cholera and pre-event measures on cholera. Cholera education or messages were not effective or adequately conveyed to the community. Participants depended on informal sources for information. Furthermore, no one during the community discussions mentioned about reading pamphlets relating to Cholera before the outbreak.

It was only during the outbreak that the Health department and other emergency actors came forward to direct and lead education campaigns. Both formal structures (churches, schools and social clubs) and informal structures (public meetings and announcements, dramas, door-to-door visits) were utilised to inform and educate the

community during the outbreak. This finding is in agreement with the literature which suggests that responses to cholera outbreaks tend to be reactive, taking the form of an ad hoc emergency response (*Cholera*, 2009, 2010). This approach may prevent deaths but it fails to empower communities to engage proactively in the prevention of cholera since the community could understand responsibility to be only in the hands of the Health department and emergency organisations.

Phase 3: Limited community participation

In phase 3 the Health department conducted a limited input and consultation strategy in Gadzema which solicited only occasional community input on the predefined, discrete issues. Subsequently the MoH used this information to make decisions about interventions (Morgan & Lifshay, 2007). This strategy assesses community needs or gathers consumer feedback related to health programmes through surveys, interviews, focus groups or community forums. It was evident that the Gadzema community was less involved in planning for health matters and emergencies before the outbreak. The lack of community health meetings reflected a typical top-down method of management and planning, ignoring the crucial social dynamics of the community (Mercer et al., 2008). Participants still raised issues for which they had no answers: for example, why water was still being rationed, why were water rates so expensive and why no meetings were held with health officials to discuss their concerns. These questions identified a significant gap in community involvement and participation in planning. Straub et. al. (2007), attest that acknowledging local knowledge and expertise will foster trust and a sense of ownership between the community and health authorities.

Phase 4: Comprehensive Community Consultation

In phase 4, the local health department solicits community input on broad range of issues and engages community members in helping to shape departmental priorities related to programmes, planning and resources (Morgan & Lifshay, 2007). Comprehensive community consultations were minimal for the Gadzema community as indicated by the participants' need for representation in the CPU and for holding holistic meetings with relevant health authorities. A local emergency NGO also indicated that Vulnerability Community Assessments (VCAs) had not been conducted in Chinhoyi; these are tools that Health organisations can use to develop the consultative processes and planning required to redress local problematic issues such as water and sanitation.

The findings also indicated aspects of exclusion from the planning on community health issues. This was especially the experience the experience from planning on community health issues. This was especially the experience of schools. Responses from the primary Health School Master indicated a lack of knowledge about the Disaster Risk Reduction programmes initiated by government for schools. A lack of shared vision between the government, local health authorities and schools was evident. Also, the concept of having a *comprehensive consultation phase* should include minority and special groups such as the Johanne Masowe sect and other spiritual groups. Their input in planning is essential in designing emergency plans and health education programmes that counter the mythical, cultural and spiritual beliefs about infectious diseases.

Phase 5: Bridging

The bridging strategy engages community members as conduits of information and feedback both to local health departments and the community. Often, individual residents are trained to be health educators. The MoC and MoH indicated that community members were recruited and trained as health volunteers during the cholera outbreak. Other community members also confirmed such training as community health volunteers. This activity was congruent with the bridging concept in health programmes as well as with the concept of bridging for the participation framework. Similarly, in a cholera outbreak in Haiti, community members were trained to become health volunteers. Family members were trained to become primary caregivers for cholera patients at the CTC due to the limited number of nurses available and the training reinforced proper hygiene (Bien-Aime et al., 2011)

However, the fact that those community members were involved in cholera health education programmes does not assume community participation as most key informants supposed. Community participation in health is a process by which members of the community, either individually or collectively develop the capacity to assume greater responsibility for assessing their own health needs and problems. Members of the community then plan and act to implement their solutions, create and maintain organisations in support of these efforts, and evaluate and bring about the necessary adjustments in goals and programmes (Zakus & Lysack, 1998). It was reported that the last time training occurred was seven months from the identification of new community health volunteers.

The entry point into each Ward is through the Councillor. Councillors take a leadership role as a conduit to convey community matters to the local health department in the case of health issues. For Gadzema, participants indicated that health matters were rarely conveyed to them by the Councillor but that it was mainly driven by the health department. The bridging concept - of utilising community members as conduits is then negated as most community strategies and information are conveyed directly to the community through pre-determined education programmes designed by the health department. Councillors are important community figures and with the bridging concept, they have to be trained on community capacity-building programmes to enable them to promote community participation and to acquire and convey health information from the community to the health department.

However it is also important to note that, in terms of the bridging concept, there are limitations attached to the Councillor's function. During the outbreak, some of the selection criteria for community members to become health volunteers were centrally controlled by power. Councillors nominated eligible candidates of their choice to become health volunteers in their Wards. Other literature suggests that in some instances, opportunities for and examples of participation are viewed skeptically by many, whereas others see them as little more than rhetorical bulwarks used by politicians seeking public support and legitimation for particular policies, or to provide 'window dressing' for aspects of public policy that may be contentious (Crosby et al., 1986; King et al., 1998, as cited in King, Feltey, & Susel, (1998). In the Gadzema outbreak, bias against political agendas almost jeopardized health programmes. Nepotism and unfair distribution of resources during the outbreak as noted were one of challenges cited by other key emergency responders from a local NGO. It can be argued that in such circumstances, health information could also be diverted or misconstrued for political agendas hence affecting the programme outcomes negatively. A collaborative and consultative process with the health authorities needs to be facilitated to allow for selection of candidates to be based on ability and willingness to contribute to health programmes rather than allowing political influences to dictate health volunteering.

Phase 6: Power-Sharing

In phase 6, the community and local health department solve problems together (Morgan & Lifshay, 2007). Members of the community and outside decision-makers

and planners agree to share planning and decision-making responsibilities about development projects involving community participation through such structures as joint policy boards, planning committees and eventually other informal mechanisms for resolving problems (Choguill, 1996). In the case of Gadzema, there was no steering committee for addressing its health issues. However the CPU took the lead in planning for the emergency with members of MoC, MoH, local NGOs and other faith-based organisations.

Other important stakeholders such as the business community lacked representation in the CPU as a potential stakeholder essential for planning and resource mobilisation. Their role was incorporated into the response phase only to provide relief by donating of money or other needed resources. Their lack of representation in the CPU also indicated that emergency issues are dealt with only by health organisations.

The concept of power sharing in the ladder of community participation does not explicitly address political power; rather it simplifies *power* by limiting the concept to solving problems together between the community and the health department. However, in power sharing there is a need to establish negotiations as suggested by Alter and Hage, 1993 and Challis et al., 1988 (as cited in Jones & Barry, 2011). They note that there is need to identify *boundary spanning skills* i.e., people who have negotiating skills to promote effective partnerships. Health committees need to be structured and have health programmes that address health issues effectively and fairly across community constructs. The political power of Councillors as conduits for information and solving problems suggests a formal means of deciding action. Based on my work experience, decisions made through Councillors are first decided at Council meetings, with the management deciding on behalf of the community rather than *with* the community members. Therefore community participation is not safeguarded merely by involving the Councillors in drafting health plans for the Gadzema community. In making use of spanning skills, other community members should be invited to have an input in decision making on health and emergency issues.

In addition, integrative leadership is required to solve problems through understanding the social and political contexts of the community (Silvia & McGuire, 2010). This type of leadership is characterised by solving problems in a *shared power world* (Jones & Barry, 2011). In all efforts to protect the public, myths and beliefs can

best be addressed through a broad range of consultations between the formal and informal structures.

Phase 7: Community Initiates and Directs Action

In the last stage the community makes decisions and acts independently of the health department. In some cases, the health department has no or only a very limited, role in the activity. Communication in this case comes in form of community organising and advocacy. From this kind of community initiative, real opportunities for public health departments to respond and support community-defined concerns arise and set the stage for future collaborations (Morgan & Lifshay, 2007).

A continuous communication process between the local authority and the community did not empower the community to direct action independently as the ladder of community participation suggests. For example, the community was involved in the health campaigns throughout the outbreak phase and until the outbreak ended. But as demonstrated by participants' responses, there are still community problems which have not been fully discussed with the local authority. The local health authority's failure to provide opportunities for dialogue with the community after the outbreak affects the community's participation since there is no established platform from which the community can address community health issues. Community networks - which include the business community, neighbourhood associations and even unemployed youth - are conduits that make up the community's social capital. For the Gadzema community, there is a lack of support structures to empower the community to be able to initiate and direct action independently. These available social networks are what are essential to building trust with the relevant local authorities for effective partnership (Jones & Barry, 2011).

Community consultation was minimal and based only on a process of providing information on health. Heritage and Dooris (2009) refer to this as a passive means of community participation rather than actively involving the community in planning. The health campaigns, even though they utilised the community-trained health volunteers and Municipal health promoters, did not directly create opportunities for community participation nor did they nurture community leadership. Volunteers were mere message conveyors and did not necessarily provide a platform for developing planning and decision-making skills to address community problems.

6.4 Concluding Remarks: Implications and Recommendations

This research sieved through the participants' perceptions to gain insight about the cholera outbreak in Chinhoyi. More importantly it indicated how the community participated in the whole process of planning and response to the outbreak. Based on the findings, it is plain that there is still room for improvement to enhance community participation and advance knowledge on emergency management amongst key emergency actors. Planning for cholera was chiefly done at management level with little indication of community participation. Community members were involved only in health education campaigns and were not empowered to be self-sustaining in order to lead and initiate health development action.

Nurture capacity-building to promote community participation

Institutional support is needed to promote capacity building that promotes community participation in health programmes (Laverack & Labonte, 2000). It is achievable if the community has the assets to begin with and the will to mobilise them (Kapucu, 2007) . Currently in Gadzema, the community is lacking community-oriented leadership to revive the available potential associations which could act as Ward action committees. Furthermore, in a participating community, power and responsibility are decentralised (Reid, 2000), and therefore through the use of Councillors, there is need to identify a functioning committee from within the community to address Gadzema's health needs with the local relevant health authorities. The potential human resources identified and suggested by the community participants (unemployed youth, ward committees, residential associations) indicate that potential community leadership exists along with the will to establish action groups. But these measures will require guidance and initiation from the health authorities such as the MoC, MoH and the local NGOs.

Volunteering opportunities need to be created and made available to the community through advertisements, press releases, publications and in community meetings. These opportunities encourage members of the community, including key community members, to take part in emergency preparedness workshops. These people might range from ordinary unemployed community members, school pupils and university students to employed or retired physicians and doctors who can provide *surge capacity* in future public health emergencies. It is also part of tapping into community resources and utilising the available human capital and knowledge base.

Promote social engagement

Community participation in emergency management can also be promoted through social engagement. There is some indication that some communities may lack the social cohesion to engage in developing community emergency plans with the local health authorities. Holding civic engagement activities such as meetings, social clubs and neighbourhood associations, bring communities together to discuss community issues holistically. It is in these meetings that community beliefs, rumours and attitudes can be discovered by health organisations and also where the health organisations can impart knowledge to the community. The environment promotes participation for the community and the health organisations, to share information and learn from each other and draft future emergency plans. This also would be a reliable method for obtaining realistic and focused plans at Ward level.

Reinforce emergency-preparedness training programmes and workshops

Consistency on conducting meetings and training on emergency preparedness needs to be prioritised to ensure that the staff and the community volunteers are well-informed. It was identified that health education programmes targeting cholera were becoming less common as the outbreak ended and that some key informants lacked skills in emergency planning. However emergency preparedness requires an ongoing process to keep all stakeholders and community members informed. More importantly, emergency preparedness should be understood differently from relief which responds to disasters or emergencies to offer aid. Rather it is a programme for capacity building and is a long-term, low visibility activity with no guarantee of tangible results in the short term (Bongo, 2009).

The Disaster Risk Reduction (DRR) programme initiated by the government in Zimbabwe in 2003 needs to be re-evaluated to ensure that schools play a vibrant role in emergency preparedness. Even though the programme was made a part of the schools' curriculum, there is a need to reformulate practical ways to incorporate meaningful strategies to prioritise it. There is a need for funding the programmes to initiate DRR programs at school level that address issues like water and sanitation problems being faced at educational level. The continued problems in schools leave the pupils at risk of yet another cholera outbreak and make the programme ineffectual as it does not deliver value to the schools' infrastructure and the wellbeing of the children.

Conduct Participatory Vulnerability Assessments

Participatory Vulnerability Assessments is a useful tool in disaster preparedness and response. The essence of PVA is for the community not only to develop community action plans, but also to have their confidence built through valuing their knowledge and to constantly seek opportunities to enhance their resilience to difficult conditions (Bongo, 2009). As in the case of epidemics such as cholera, they are not just biological occurrences but are a result of social and cultural processes which are collectively shaped by society and culture (Sommerfeld, 1994). Therefore gathering knowledge of where groups are concentrated within communities and the general nature of their circumstances is an important step towards effective emergency management (Morrow, 1999). Mapping out the vulnerable areas for the town is also a step towards developing effective emergency planning.

6.5 Conclusions

This paper examined the perceptions of community members in Gadzema, a cholera-affected community, and perceptions from emergency actors in Chinhoyi to get an insight into how the planning and response activities to the outbreak were conducted. It was important to find out how the community participated in the three phases of the outbreak: before, during and after. Findings from the study indicated that planning was mainly centred in the top-down management that based emergency planning on stock piling of emergency resources and not in prioritising community participation in the planning. In the response and recovery phases, communities were “involved” in health programmes rather than being strategically empowered to act independently should another outbreak occur. Community empowerment programmes were recommended to ensure community members are able to participate in emergency planning and also to enhance partnership with local and other relevant authorities.

However community participation, as presented in this paper, is not a new concept but seeks to reinforce the role of community in health programmes. This research study is also a potential developmental tool that can be used to promote community participation in emergency planning for future emergencies in Chinhoyi through advocating for community health and development programs. Health programmes such as the Participatory Vulnerability Assessments projects have not been conducted in Chinhoyi since the outbreak occurred and it is an essential tool in initiating steps for community planning and community participation.

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