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AN ASSESSMENT OF THE FACTORS THAT LEAD TO CHOLERA OUTBREAK IN HARARE URBAN DISTRICT: A FOCUS ON INTERNATIONAL NON-GOVERNMENTAL ORGANISATIONS AND UNITED NATIONS PERSONNEL PERSPECTIVE

Naume Ndanatsei Watyoka
Part-time tutor Zimbabwe Open University,
Faculty of Applied Social Sciences, Psychology Department
51 First Avenue Parktown Waterfalls Harare, Zimbabwe.
Zimbabwe Open University P O Box MP 1119, Mt Pleasant, Harare,
Zimbabwe
naumewatyoka@yahoo.com

ABSTRACT
This study sought to highlight factors that led to the cholera outbreak in Harare Urban District. The cholera outbreak of 2008/2009 in Zimbabwe was a disaster. Harare Urban District had 17,132 cases and 495 deaths from the country total of 98,592 cumulative cholera cases and 4,288 deaths from reported between August 2008 and July 2009. Information was sought from key informants from International Non-Governmental Organisations (INGOs) and United Nations. Data was collected using face to face interviews. The findings are that erratic water supply, broken down Water and Sanitation & Hygiene (WASH) infrastructure, poor personal hygiene, person to person transmission, poor surveillance techniques and broken down health system led to the outbreaks as a result of a complex socio-economic and political environment. It is recommended that WASH and Health should remain the country's priorities in terms of national budgeting to ensure that people's health and lives are protected, restore public health infrastructure and build capacity of local authorities. Regular surveillance and early detection as well as working with communities to empower them is needed. Identification of all risk factors which make people vulnerable to cholera should be addressed such as overcrowding by managing urbanisation.

General Terms: Disaster, Disaster Risk Reduction, Health.

Keywords: Cholera, Cholera outbreak, Harare

1. INTRODUCTION & BACKGROUND TO THE PROBLEM
Cholera is viewed as a transboundary communicable disease that requires complex interventions in terms of preparedness and response, management, prevention and mitigation. The devastation of the 2008 cholera outbreak in Zimbabwe and the resultant impact on neighbouring states provoked a particular interest and concern in relation to cholera. As noted by Funke, Jacobs, Said, Nienaber, and Steyn (2009) cholera is now endemic in the SADC region and should be addressed both from a health and a political point of

view. Other countries in Southern Africa were affected by cholera in 2009 either as a result of the Zimbabwe outbreak or independently of it. These countries are Angola, Botswana, Malawi, Namibia, South Africa, Swaziland, Zambia and the Democratic Republic of the Congo (DRC) (Kiem, 2009 in Funke, Jacobs, Said, Nienaber and Steyn, 2009).

Vulnerability to disease outbreak and mortality is high especially amongst the poor with greater risk of death in individuals with lower immunity such as malnourished children or people living with HIV. Diarrhoeal diseases (cholera, typhoid and dysentery) have become a major health concern in the country with a lot of resources being channelled towards their curbing.

According to the WHO (2009 in Pruyt 2009):

> Cholera is an acute enteric infection caused by the ingestion of bacterium Vibrio cholerae present in faecal contaminated water or food. [. . . It] is characterized in its most severe form by a sudden onset of acute watery diarrhoea that can lead to death by severe dehydration. The extremely short incubation period –two hours to five days– 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. However, the pathogens stay in their faeces for 7 to 14 days and are shed back into the environment, children and adults. Unlike other diarrhoeal diseases, it can kill healthy adults within hours. Individuals with lower immunity, such as malnourished children or people living with HIV, are at greater risk of death if infected by cholera (p1).

1.1 Statement of the Problem

Zimbabwe made headlines in the 2008/2009 cholera outbreak. Socio-economic and political challenges experienced especially from the year 2000 led to the worst cholera outbreak in 2008. A combination of factors such as poor water and sanitation facilities, broken down health delivery system, individual vulnerabilities such as compromised immune system due to HIV and AIDS and malnutrition led to spreading of cholera infections and deaths. In essence cholera in Zimbabwe was a disaster that required humanitarian assistance. Ministry of Health and Child Welfare (MoHCW) surveillance department reported 98,592 cumulative cholera cases and 4,288 deaths from August 2008 through July 28, 2009 countrywide (CDC 2009:3). Harare Urban District had 17,132 cases and 495 deaths (http://www.hararecity.co.zw/index.php/departments/health/environmental-health).

1.2 Research Question

The research is based on the following research question:

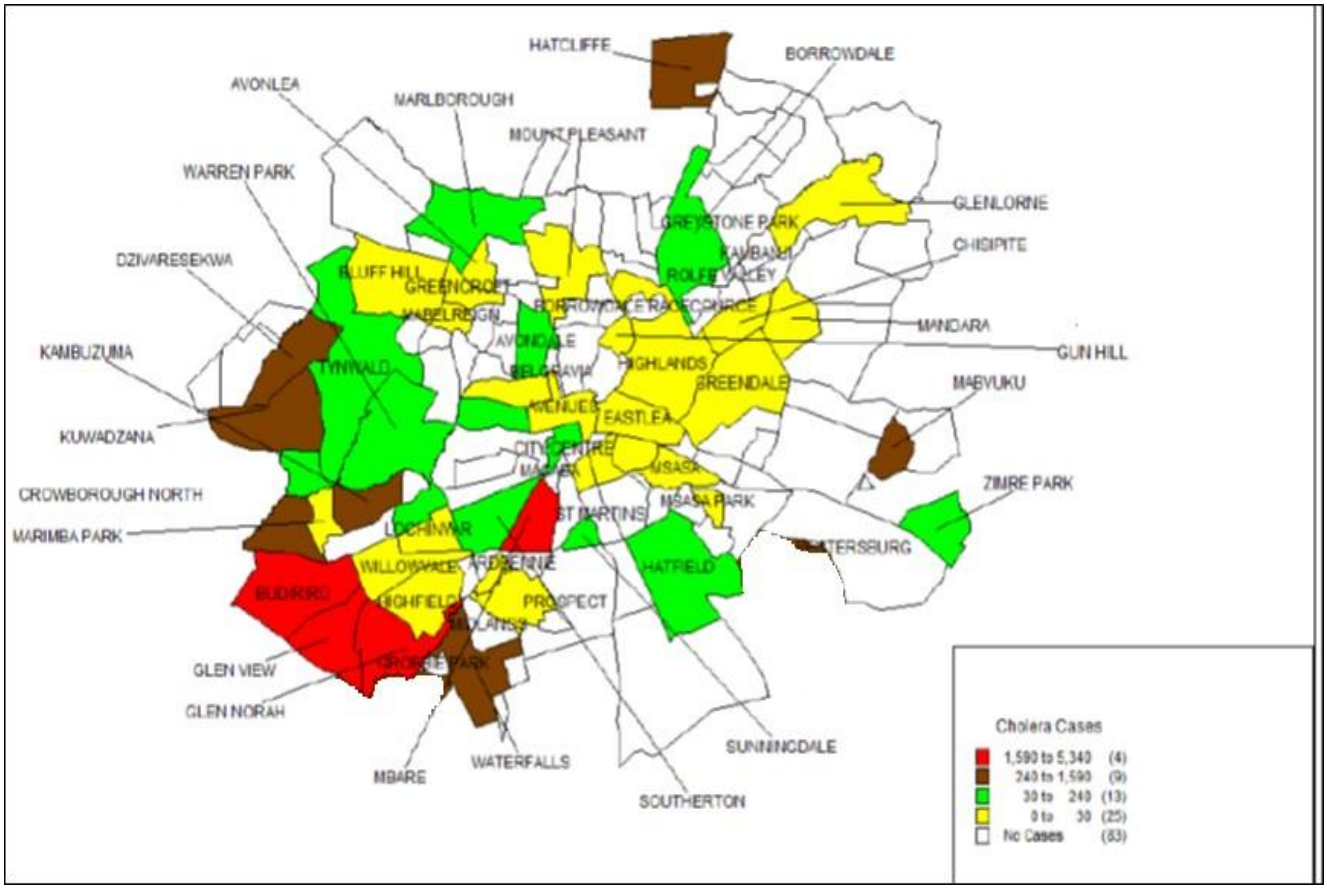
- What factors led to the outbreak of cholera in Harare Urban District?

1.3 Significance of the Study

Cholera in Zimbabwe was a disaster and impacted negatively on both household and national levels. At household level people became sick and some lost loved ones and the burden of cholera spread to all settings such as workplaces as people could not attend work due to sickness or death. A lot of money was channelled towards reacting to a disaster in 2008/2009. A lot of players including the government, Non-governmental Organisations (NGOs) (local and international), United Nations (UN) agencies, Community Based Organisations (CBOs) and individuals were involved in reducing cholera. On the basis of the preceding points, the study has two major values. First, the key players in alleviating cholera will be informed of the real problems leading to cholera outbreaks and respond accordingly to avoid outbreaks. Second, recommendations on strategies that can be effectively used in controlling cholera will then be formulated given the root causes of cholera.

1.4 Delimitation of the Study

The research aims to analyse the causes of cholera from a development point of view to uncover the underlying and immediate causes in Harare Urban. An understanding of the causes help understand how the issue of cholera needs to be addressed in order to reduce its debilitating effects and avert disaster. The research targets the years 2008 – 2013. The focus on these years is attributed to the fact that the worst recorded outbreak was between 2008 and 2009.



Adapted from: Chipare 2010

Figure 1: Map of Harare urban showing distribution of cholera cases for 2008/2009

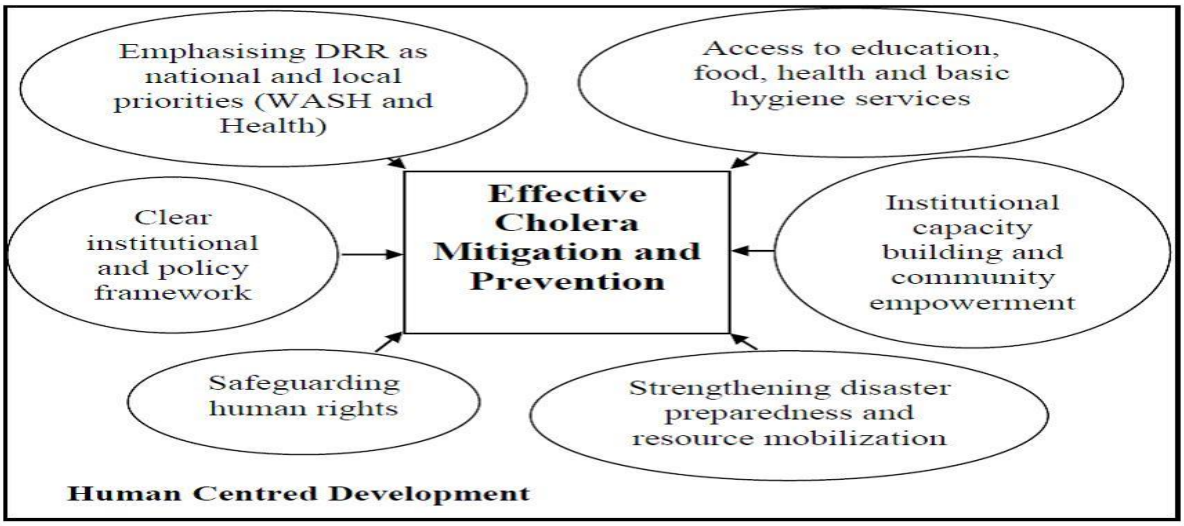
2. REVIEW OF RELATED LITERATURE

The review of related literature comprises a three-fold presentation namely, the conceptual framework, theoretical framework and related studies. First, the conceptual framework is referred to as the Human Centred Development. Second, the theoretical framework for use in this study is called Disaster as Avoidable Human Creation and Prism Highlighting Societal Injustice and Growing Vulnerability. Third, related studies will draw subheadings from the research question.

2.1 The Study Conceptual Framework

Basing on the study's guiding theoretical framework, a conceptual model was then developed presented fig 2.

The study uses the Human development or people-centred paradigm where the focus is put on the improvement of the various dimensions affecting the well-being of individuals and their relationships with the society (Bellù, 2011). These dimensions include health, education, entitlements, capabilities and empowerment. Knowing the cholera risk factors enable development practitioners and communities to manage their environment, health and wellbeing. In view of the foregoing researcher-centric conceptual model, Bellù (2011) notes that in people-centred development focus is put on the improvement of the various dimensions affecting the well-being of individuals and their relationships with the society such as health, education, entitlements, capabilities and empowerment. UNDP (2010) cited by Bellù (2011:4-5) provides an aggregate concept of human development on the basis of three criteria: (i) "Long and healthy life", (ii) "knowledge" and (iii) "A decent standard of living", respectively measured by life expectancy at birth, mean years and expected years of schooling and gross national income per capita at purchasing parity.



Source: researcher

Figure 2: Study Conceptual Model

2.2 Theoretical framework: Disaster as Avoidable Human Creation and Prism Highlighting Societal Injustice and Growing Vulnerability

Disaster can be viewed as avoidable human creation highlighting societal injustice and growing vulnerability. This theoretical perspective views disaster as human culpability thus blaming other humans for bringing disaster upon others. This view focuses on people's vulnerabilities and unequal distribution of risk associated with aspects such as class and gender. The victims of disaster are at the centre of this perspective. Cannon (1994:18) notes that "The economic system and class structure allocates income and access to resources, and this has an impact in terms of people's ability to cope with hazards (their nutritional level, physical resilience and subsequent access to resources), all affecting their potential for recovery." In this instance, nature or God is not to blame but weaknesses and factors present before and during the disaster which may still be present afterwards.

Cholera is classified as a biological hazard. Disaster is caused by exposure to germs (bacterium vibrio cholerae) resulting in an epidemic. Although cholera can be classified as a natural hazard because of being a biological phenomenon, it cannot be said to be an act of God or fate where people can do nothing when in fact they actually can. If the spread of cholera and its calamitous consequences is attributed to avoidable human creation resulting from societal injustice and growing vulnerability, then addressing the root causes (injustice and vulnerability) is the desired development action. Injustice emanates from inequitable distribution of resources and risks. The poor people living mainly in high density areas are affected most by cholera and have limited access to resources. From the causes of cholera discussed above, there is need for hazards and vulnerabilities to be addressed. There is need for human action whether by governments or any other duty bearers and the individuals and communities through improved capacity and building resilience. Hence the need for conduct of this study.

3. RELATED STUDIES

3.1 Causes of Cholera as Developmental Challenges in Harare Urban

The causes of cholera in Zimbabwe in general and Harare Urban District in particular were as a result of some forms of deprivation relating to political and socio-economic factors. The environment in Zimbabwe from the year 2000 to 2009 was characterised by a lot of deprivations such that the causes of cholera can be grouped into immediate and underlying causes.

3.2 Immediate Causes of Cholera

The immediate cause of cholera is ingestion of vibrio cholerae (bacterium that causes cholera). The bacterium can be ingested through eating contaminated food, drinking contaminated water or contact with the bacterium through contaminated hands. Disease transmission is via the faecal-oral-route. The greatest risk occurs in over-populated communities, displaced populations and refugee settings. Vibrio cholerae usually reside in tidal waters and bays and proliferate mostly in summer months (when water temperatures exceed 20°C). Humans become infected incidentally, but then can act as vehicles of spread (PHR: 29). The following ways were the immediate causes of cholera in Zimbabwe and Harare in particular.

3.3 Unimproved Water Sources

Unimproved water sources such as rivers, shallow wells and other unprotected water sources have high chances of faecal contamination. This is so especially in the rainy season when there is runoff and faeces get into water sources. The faeces are as a result of open defecation by humans due to inadequate sanitation. Leaking sewage pipes have also led to faecal contamination of water sources. Surface water, which seeps into porous ground and into shallow wells become contaminated with faecal waste because of leaking sewerage pipes (PHR 2008:24). Piped water had become unreliable (still is) in many suburbs that people resorted to unimproved sources such as shallow wells. For instance as reported by city of Harare (2008), challenges in procurement of chemicals and power outages resulted in erratic water supplies to residents who dug shallow unprotected wells which resulted in an explosive cholera epidemic. In the high density suburb of Budiriro in Harare which was the epicentre of cholera, people dug shallow wells as a way of coping with water shortages (Chipare 2010). The citing of the shallow wells could have contributed to cross contamination where the wells were dug in close proximity to sewer systems.

3.4 Contaminated Food and Water

Food can be a source of cholera infection as well as water which gets contaminated at point of use by hands that are soiled with human faeces. Food can be contaminated during or after preparation. The Zimbabwe cholera control guidelines by MoHCW and WHO (2009:10) indicated fish/seafood, fruits and vegetables particularly taken from contaminated water and eaten raw or insufficiently cooked as a source of cholera infection. Fruits and vegetables grown at or near ground level, irrigated with water containing human waste, or "freshened" with contaminated water, and eaten raw are also sources of cholera infection (ibid:10).

3.5 Person to Person Transmission

The most common means of infection is mainly through direct contact with contaminated hands (MoHCW and WHO 2009; Rusakaniko, Maradzika, Tapera, Chikwasha, Takarinda, Taputaira, Simbini, Shambira and Chimatira 2009; UNICEF and MWRDM 2009a). Risk factors noted by Rusakaniko et al. (2009) include the practice of handshaking at funerals and use of water from a common container to wash hands after toilet use. The mobility of populations within urban and from urban to rural became the major factor in the spread of the cholera epidemic (ibid: 17). As noted by Lamond and Kinyanjui (2012:8) infected people (symptomatic or not) can carry and transmit bacteria during weeks 1–4 and a small number of individuals can remain healthy carriers for several months. Cholera is extremely contagious. It can be picked up very easily. Communities in which people are moving about a lot, gathering, dispersing… can import and export cases to new areas very rapidly (ibid: 8).

3.6 Corpses of Cholera Patients

In terms of the Provisions of the Public Health Act, Chapter 15:09 (Sections 33-34) funerals of people who have died of cholera or of any other cause in a community affected by cholera can contribute to the spread of the epidemic. A designated health worker should be present to supervise the funeral (MoHCW and WHO, 2009:61). Corpses of cholera patients are highly infectious through body fluids (Lamond and Kinyanjui, 2012:7). Physical contact during funeral ceremonies is also a major medium. Culturally some people in Zimbabwe wash bodies of their relative(s) as part of the burial rituals. People gather and food is prepared for many people hence funerals were a high risk place for the spread of cholera during the outbreaks. In Gokwe North and Binga communities as noted by Rusakaniko, Maradzika, Tapera, Chikwasha, Takarinda, Taputaira, Simbini, Shambira and Chimatira (2009:41) there were conflicts with people accusing each other of witchcraft and in the process further spreading the disease by gathering at funerals. They further note that, the cycle was only broken when MoHCW environmental health officers travelled to the places to provide accurate information on how cholera spreads and how the community can prevent its spread at community level.

3.7 Underlying Causes of Cholera

The underlying causes of cholera are discussed under socio-economic and political factors which prevailed from the year 2000 onwards when Zimbabwe experienced complex socio-economic and political challenges. Kinna (2010) notes that since independence in 1980, the state of Zimbabwe's health system, similarly to that of education had travelled a path of steady improvement struck by ruinous decline, and it is only now achieving a slow, fragile recovery.

3.8 Socio-economic Factors

The underlying socio-economic factors that led to the cholera outbreaks in the years 2008 – 2011include: insufficient water and sanitation coverage resulting in poor hygiene practices, an economic crises (hyperinflation which made budgeting impossible, lack of financing for activities, power cuts leading to disruption of water treatment services) and emigration of skilled labour force; a lack of health provision; comorbidities with HIV and AIDS against a lack of resources to fight it and malnutrition (Coulibaly- kone 2010; Kinna 2010; PHR 2008; National Action Committee 2011; Rusakaniko et al. 2009; United Nations 2011).

3.9 Insufficient Water and Sanitation Coverage

Despite some interventions carried out by Government and other development players (NGOs, UN agencies and CBOs) over the years even at the height of the cholera outbreak in 2008 and 2009, coverage remains low for both water and sanitation. Results of the

Zimbabwe Demographic and Health Survey (ZDHS) indicate that 79% of Zimbabwean households use an improved source of drinking water whereby source is an indicator of water quality (ZIMSTAT and ICF Macro 2012:9). Non-improved sanitation for urban areas is recorded at 6.6% whilst some facilities though improved[1] are shared amongst households (48.5%) hence both non-improved and shared facilities are classified as unhygienic as they do not effectively separate human waste from human contact (ibid:9). The rural situation is worse as only 30.8% constitute toilets. A combination of factors therefore led to cholera disease outbreak as the urban areas were affected most compared to rural settings yet urban areas have high coverage. Flush toilets require availability of water which was often cut therefore leading to unhygienic conditions or resorting to open defecation.

3.10 Economic Crises from the year 2000 and Lack of Health Provision

The economic crises led to hyperinflation which made budgeting impossible, lack of financing for activities, power cuts leading to disruption of water treatment services. The crises cannot be separated with all the other factors that led to the cholera outbreak. In terms of being a contributing factor to the spread of cholera, the economic crises had several effects. Availability of water in urban settings was disrupted due to power cuts by the national power utility. Interconnectedness of services mean disruption of one would lead to disruption of others. The hyperinflationary environment was characterised by shortages such that even if money was available for a certain service, lack of components would jeopardise the work rendering the money useless at a later date. Emigration of skilled labour force had effects on service provision as there remained people with lesser skills and qualifications.

According to ZIMSTAT and IOM (2009):

> *"…the permanent or long-term migration of highly skilled workers… has negative effects on the economic and social development of countries of origin, as it removes workers who may be critical for the functioning of the economy and of basic social services that may be critical for the promotion of socio-economic development. Brain drain is often associated with the emigration of professionals with key skills, such as doctors, engineers, and other professionals". (p65).*

Service provision can overburden the few remaining professionals. Whilst emigration is said to have benefits in terms of remittances, it is critical to have the manpower on the ground to make things happen. Nhapi (2009:230) notes that Harare has always operated with less than 10 engineers dealing with water issues for a population of more than 2 million people and Harare has a ratio of about 1 engineer for 100,000 residents. He further notes that the ratio proposed by some local authority engineers should be about 1:20,000 for effective management.

Health provision had almost ceased as noted by PHR (2008) as government health institutions closed as staff could no longer afford transport fares to work and the institutions themselves lacking necessary equipment to function adequately. Mission and private medical institutes which remained open were either overburdened or too expensive for the poor. The institutions demanded payment in foreign currency (before adoption of multi-currencies in 2009 and discarding the Zimbabwe dollar) which was not accessible to many. At the beginning of the cholera outbreak in August 2008 people found it useless to visit clinics as there was no service which worsened the disaster.

3.11 Nutritional Status and HIV & AIDS and Cholera Vulnerability

Malnutrition and HIV and AIDS are noted in several sources as having catalytic effects in terms of vulnerability to cholera (PHR 2008; CDC 2009; Lamond and Kinyanjui 2012; Rusakaniko et al. 2009; WHO 2009). For instance as noted by WHO (2009) unlike other diarrhoeal diseases individuals with lower immunity, such as malnourished children or people living with HIV, are at greater risk of death if infected by cholera. Whilst it cannot be conclusive, malnutrition and HIV and AIDS are associated with the high CFR during the cholera outbreaks which affected individuals who had compromised immunities due to those reasons. As noted by Rusakaniko et al. (2009) CFRs varied by district and reflected issues of access to care, quality of care, and underlying prevalence of co-morbid conditions such as HIV/AIDS and malnutrition. This means HIV and AIDS and Malnutrition were amongst the reasons for high CFR though there are other contributing factors.

3.12 Political Factors

Underlying political factors leading to the cholera outbreaks include: weak institutional and policy framework; lack of political will (neglect of WASH and Health during the economic crises and political transition) and lack of an enabling environment.

3.12.1 Weak Institutional and Policy Framework

The NAC (2011:5) note that a number of water and sanitation related pieces of legislation exist in the various government agencies but their enforcement is generally weak. This shows accountability problems leading to lack of implementation or neglect of WASH services. The national WASH programme has been operating without a consolidated WASH policy relying on out-dated strategies and guidelines derived from various pieces of legislation which include: the Water Act, the Public Health Act, the ZINWA Act, the DDF

[1] Improved toilets are those that flush to a piped sewer system or septic tank.

Act, the Provincial Councils Act and the Traditional Leadership Act (ibid:8). Given the institutional and policy framework without a specific WASH policy, NAC (2011) had this to say pertaining to the cholera outbreak:

> *"The cholera outbreak was in itself an impetus to re-examine approaches to WASH development in the country, amongst them the need for sector coordination, institutional rationalization and capacity development and the need to prioritise sanitation and hygiene issues on the national development agenda." (p9).*

This proposed WASH development strategy is in line with political commitment in Disaster Risk Reduction (DRR). The cholera outbreak was a call for re-examining a lot of 'neglected' areas which is a positive outcome resulting from a negative experience.

3.12.2 Lack of Political Will and an Enabling Environment

From March 2008 after the harmonised elections, politicians were busy fighting and there was a political impasse. This made acting in development interest almost impossible due to preoccupation with the political situation. The prevailing socio-economic and political environment made it almost impossible to carry out development work in order to mitigate disaster risk. When the 2008 cholera outbreak began, a late emergency declaration and call for assistance resulted in expansion of the outbreak which made it difficult to control as the cases were widespread. This late call could be as a result of government imposed restrictions between June and August 2008 especially in the rural areas were access to communities was restricted for non-government organisations (PHR 2008).

Although the factors that led to the outbreak of cholera are to an extent attributed to Zimbabwe's socio-economic and political environment, it is worth noting that external factors also contributed. For instance, the Zimbabwe Democracy and Economic Recovery Act (ZDERA) of 2001 which are sanctions against some Zimbabwe government officials by the United States had a role to play. The sanctions stated that Zimbabwe did not observe human rights due to the anarchical land reform programme and engaging in the Democratic Republic of Congo for political gains and was therefore sanctioned from benefitting from aid that come from International Financial Institutions (IFIs) hence donor disengagement and suspension of development projects.

4. RESEARCH METHODOLOGY

4.1 Paradigm

The study adopted qualitative research methodology. Qualitative research suited this study because it is people centred in its approach to study phenomena (Creswell 2012). Research sought data were generated from the point of view of the research participants.

4.2 Design

The study was a cross – sectional case study. The design used qualitative techniques which seek to gather information from informants' experiences and feelings. The design allowed generalizability of the study results to other cities. The research aimed to analyse the causes of cholera as a developmental challenge in order to find ways to avoid future disasters.

4.3 Population and sampling

The population under review were organisations which played key roles during the 2008/2009 cholera outbreak. Eight of them were selected on the basis of reporting cholera interventions in Harare Urban District according to the WASH Atlas of 2008 – 2009[2] whilst one other was selected on the basis of their strategic role during the cholera outbreak as well as their current roles in ensuring DRR. Purposive sampling was used in the study in selecting key informants within the organisations. The key informants were chosen on the basis that they are the people who were directly involved in carrying out activities which led to curbing cholera.

4.4 Research instruments

Key Informant Interviews were used to gather sentiments of the informants. The interviews were done by setting prior appointments and the researcher had to visit the organisations to carry out the interviews. These key informants are the representatives of organisations which were involved in the activities to contain the cholera outbreak. The interview questions were semi-structured. Secondary data review was also employed. The published (and unpublished) information related to the research helped the researcher to gain an insight on researched issues and used the information for cross referencing. Some research questions were answered using secondary data from documents such as evaluation reports and various studies relevant to the study. These include documents such as the health vulnerability assessments, the national sanitation and hygiene strategy among other documents. These documents were obtained directly from various organisations involved in cholera response such as UNICEF, Harare city health department and WHO as well as archived materials on websites.

4.5 Data presentation and analysis procedures

The findings were presented in charts and thematic areas. The research question was answered using responses from interviews linking the research findings to what was reviewed in the related literature.

[2] Intervention Mapping for Water, Sanitation and Hygiene (WASH) in Zimbabwe - who is doing what and where, WASH Atlas 2008 -2009, Vol. II (fifth edition) compiled by UNICEF

4.6 Ethical considerations

Participants had the purpose of the study explained to them. Confidentiality was observed during the interviews to make respondents comfortable and was promised after data collection to ensure that individual responses remain anonymous.

5. RESEARCH FINDINGS

Bio-data

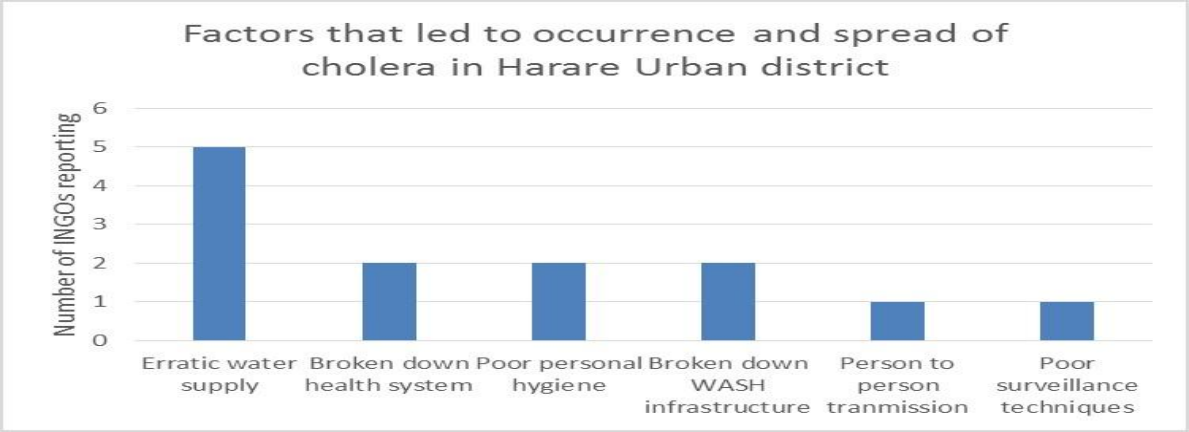
The respondents were experts in various fields of development such as health, WASH and DRR. Characteristics such as age and sex were not considered of importance but the expertise in relevant areas of cholera response. The number of INGO key informants contacted was six (6) and those for the United Nations were three (3).

Actual Findings and Discussion

The factors that led to the occurrence and spread of cholera are discussed below.

Factors that Led to the Occurrence and Spread of Cholera

n=5



Source: primary data

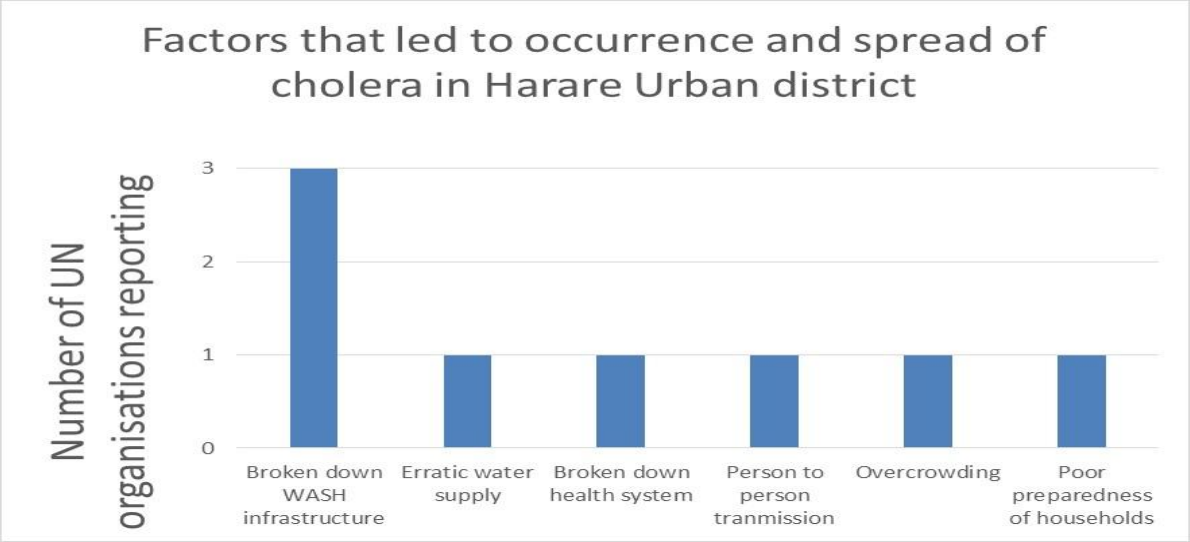
Figure 3: Factors that Led to Occurrence and Spread of Cholera in Harare as reported by International Non-Governmental Organisations

***1** *organisation had no response to this question, the question required giving reasons that led to occurrence and spread of cholera in areas they intervened. The person interviewed was engaged after the outbreak and lacked necessary documentation to respond.*

The INGOs worked in at least one of the following high density suburbs of Harare: Budiriro, Glenview, Glennorah, Kuwadzana, Dzivarasekwa, Mabvuku / Tafara, Hatcliffe Crowborough, Highfield, Kambuzuma, Mufakose, Rugare, Warren Park and Mbare.

All the reporting INGOs reported that water supply was erratic due to its unavailability at households or insufficiency. Most of the times there was no running water. For Budiriro high density suburb which was the epicentre of cholera, it is reported that people mostly resorted to unsafe water supplies such as shallow wells which were not well positioned and easily contaminable during the rains. That compromised health and hygiene. One informant said “if health system was working even without water cholera would be minimised” The broken down health system led to spreading of cholera, the health system collapse itself was as a result of the economic crisis that was prevalent leading to absence of health personnel. Poor personal hygiene (which could be as a result of erratic water supply or just poor practices in an environment with cholera), and broken down WASH infrastructure and services (burst sewer pipes, poor water and sanitation systems, supply of unsafe water) contributed to the outbreak. In Budiriro and Glenview there were leaking pipes were people fetched clear but contaminated water which would have interacted with burst sewer pipes. While people had faith in borehole water, not all drilled boreholes were safe because some did not get tested. Despite serious water woes in other areas, person to person transmission was alluded to for all other areas. Poor surveillance techniques or activities were also to blame as one key informant reported that Harare index case (first case of cholera occurrence) was thought to be general diarrhoea leading to the spread of the disease.

n=3



Source: primary data

Figure 4: Factors that Led to Occurrence and Spread of Cholera in Harare as reported by United Nations Organisations

One UN organisation worked in of Harare urban district's high density suburbs whilst the other 2 worked in some of the high density areas such as Budiriro, Hatcliffe extension, Dzivarasekwa extension, Dzivarasekwa, Glennorah, Mufakose and Kuwadzana as well as transit areas such as Mbare bus terminus, Harare train station and Road Port.

All the UN agencies concur that Broken down WASH infrastructure and service led to the cholera outbreak as there was inadequate water and sanitation supply. One organisation explained the breakdown of the services due to long periods without any investment. Erratic water supply was reported as one of the causes of the cholera outbreak as there was reportedly no water coming out of taps. The erratic water supply led to use of unsafe water sources such as shallow wells. The broken down health system led to the spread of cholera as there were no personnel to at health service centres to attend the infected people. In the words of one key informant, economic recession led to unavailability of municipal and central health services. Person to person transmission was inferred when frequent movement of people was alluded to as leading to spread of cholera. Overcrowding and poor preparedness of households and communities to adequately respond to the outbreak were also mentioned as some of the factors that fuelled the outbreak.

Overall the dominant themes as reported by organisations in terms of the factors that led to occurrence and spread of cholera include erratic water supply and broken down WASH systems accounting for the greater part. As stated earlier, inadequacy of water supply, sanitation, food safety and hygiene can lead to occurrence of cholera outbreaks as cholera is usually transmitted through faecal contaminated water, hands or food (Lamond and Kanyanjui, 2012). Cholera response interventions were concentrated in high density suburbs where overcrowding leads to poor sanitation. Broken down WASH services undermine hygiene leading to cholera infections. Due to communicability of cholera people become vehicles of transmission. Frequent movement of people was said to be favourable for cholera transmission and general movement in transit areas such as Mbare and the City centre. Once affected by cholera there was need for management of cases in health centres to avoid further dehydration and death yet the system was non-functional. Health service providers were responsible for management to avoid spread of the disease. Budiriro and Glen View were cited as areas where piped water interacted with sewage due to burst pipes and people resorted to unsafe shallow wells as an alternative. Some boreholes drilled by some organisations were said not to be safe as some did not get them tested yet people believe borehole water to be safe. Inadequacy of WASH services was due to underinvestment because of the economic recession which affected all operations including health. Households were vulnerable as they did not have the necessary means to look after their health. It is noteworthy as one respondent mentioned that poor surveillance techniques or activities led to exacerbation of the outbreak as the Harare index case was thought to be general diarrhoea leading to spread of disease.

6. CONCLUSIONS

Dominant factors that led to occurrence and spread of cholera include erratic water supply and broken down WASH systems accounting for the greater part. These in turn led to use of unsafe water and poor hygiene practices. Once infected people became vehicles of transmission due to cholera communicability at a time when the health system was compromised. These factors are linked to a non performing economy, a vulnerable population and neglect of health and WASH services.

7. RECOMMENDATIONS

From the foregoing findings and conclusions, the following six recommendations are made:

1. WASH and Health should remain the country's priorities in terms of national budgeting to ensure that people's health and lives are protected.
2. DRR should be prioritised by strengthening prevention through public health promotion instead of responding to emergencies as more resources are needed when responding.
3. In areas with fewer water points (boreholes), priority should be given to avail such resources as a short term measure as restoration of broken down systems take longer with the complex socio-economic and political background.
4. Human centred development is holistic. To address overcrowding (which makes populations vulnerable to cholera), urbanisation should be managed and services such as accommodation should be made available.
5. Every child should be able to attend school to gain necessary life skills and every individual should be entitled to accessing resources that enable a dignified standard of living.
6. Emphasis should be on risk identification by communities and service providers and in turn application of risk reduction measures such as networking and partnerships in interventions as well as empowering communities to take care of their health.

8. ACKNOWLEDGEMENTS

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