AN ANALYSIS OF CHOLERA INTERVENTIONS BY DEVELOPMENT ORGANIZATIONS IN HARARE URBAN DISTRICT FROM A DISASTER RISK REDUCTION PERSPECTIVE.

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Abstract
This study analysed the interventions undertaken in Harare Urban District that contributed to curbing of cholera from 2008 as well as current interventions toward prevention. A mixed method approach was used combining household survey, focus group discussions and interviews. Interventions carried out were of great assistance (awareness and prevention education, provision of temporary and long term water supplies, sanitation and case management) although challenges in terms of mainly resources and coordination were met. Inconsistent funding to carry on with cholera prevention is still a challenge and risk factors are still abounding with some key organisations lacking capacity to act and provide the information to be acted upon. Prevention work is on-going but there is still need to continuously educate people and restore public health infrastructure and build capacity of local authorities, regular surveillance and early detection as well as working with communities to empower them as provided for in the recommendations given by respondents. An all stakeholders workshop is therefore recommended to ensure that resources are pooled together and disaster risk reduction carried out as a way of protecting people’s health and livelihoods.

Keywords: Cholera outbreak, Intervention, Darheal diseases.

INTRODUCTION
Diarheal diseases (cholera, typhoid and dysentery) have become a major health concern in the country with a lot of resources being channeled towards their curbing. This study focuses on cholera interventions in Harare Urban District from a Disaster Risk Reduction (DRR) perspective from 2008 – 2013. The 2008/2009 outbreak was the largest ever cholera outbreak in the country requiring humanitarian effort. The 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 nationwide (CDC 2009:3). Harare Urban District had 17,132 cases and 495 deaths (http://www.hararecity.co.zw/index.php/departments/health/enviroemntal-health). Of the country’s 62 districts, 55 (89%) were affected by the cholera epidemic (Rusakaniko et al, 2009). The crude-case fatality during the outbreak was 4.3% against the acceptable World Health Organisation (WHO) 1% threshold, with 61.4% of the cholera deaths occurring outside of health facilities. On 28 July 2009, after several weeks of zero reporting, the Ministry of Health and Child Welfare officially declared Zimbabwe cholera free (WHO 2009). After the 2008/2009 outbreak, another outbreak began in 2010 spilling into 2011 recording 2,156 cumulative cases and 67 deaths by June 2011 (WHO 2011). Reactive measures (provisions of buckets and water treatment tablets, water trucking, installation of water tanks in schools and clinics) helped in containing the cholera outbreaks yet best interventions in the long run are as a result of understanding and addressing the root causes as this is a preventive measure.

It is important to incorporate DRR in development programmes in order to prevent disease outbreaks and loss of life. DRR as defined by UNISDR is “The concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events” (UNISDR, 2008:10-11). DRR policies and strategies view disasters as socio-economic and political in origin. For development (positive change in existing human societies as measured by the results seen in the society) to be realised, all forms of vulnerabilities and hazards should be addressed. Political and economic events which prevailed in Zimbabwe from the year 2000 presented challenges whose effects are still felt by the population. The land reform programme of year 2000 led to political disturbances and donor disengagement. A decline in agricultural production ensued in the following years. An economic decline, hyperinflation, internal displacements, increased emigration, food insecurity, inter-political party violence and continued degradation of basic social infrastructure from 2000 – 2008 impacted negatively on Zimbabwe’s development. The outbreak of cholera in 2008 is attributed to these factors and addressing it means addressing the political and socio-economic challenges. Improvement of various dimensions affecting people’s lives such as health, education, entitlements, capabilities and empowerment should be realised if development is said to have taken place.

Research Aim and Scope
The research aims to analyse the causes and effects of cholera from development point of view and to uncover practices in Harare Urban that contributed to successful curbing of cholera or lack thereof. The fact that some suburbs had fewer cases than others could be an indication that interventions and the underlying root causes may not be the same for areas concerned. Recommendations on strategies that can be effectively used in controlling cholera will then be formulated given the root causes of cholera.

Statement of the problem
Zimbabwe made headlines in the 2008/2009 cholera outbreak yet documented evidence shows that since 1998 cholera cases have always been reported annually. Between 1975 and 1997 which is 23 years in total, cholera cases were not occurring annually, and were reported in 10 of the 23 years in magnitude that were not alarming. 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. This study therefore sought to identify interventions that have been done, that are being done and what still needs to be done in order to effectively control cholera. Analyses of the interventions help in formulating recommendations for effective DRR strategies.

Research Objectives
The following are the objectives of the research:
a) To identify and discuss cholera prevention and mitigation interventions.
b) To formulate recommendations on strategies that can be effectively used in controlling cholera.

Research Questions

1. What interventions were and are being carried out to curb cholera?
2. What challenges are experienced in reducing cholera?
3. What strategies can be employed to effectively control cholera?

METHODOLOGY
The study is a cross-sectional case study. This design is limited to a given time period and concentrated only on that period, in this case 2008 to 2013 and consists of an in depth investigation about cholera interventions by selected development organisations taking into account community perspectives. The design encompasses both qualitative and quantitative techniques but predominantly qualitative. The qualitative technique seeks to gather information from informants’ experiences and feelings whilst the quantitative techniques is objective as it seeks to gather information on items such as distance travelled to a water source.

Target Population
The study consisted of key informants from selected government departments, UN agencies, NGOs, FBOs and private sector who were and/or are directly involved in ensuring reduction and prevention of cholera. These informants provided information on strategies used to contain cholera and challenges faced in cholera response. They also gave recommendations about how best to ensure non recurrence of cholera in Zimbabwe based on their experiences. Having worked directly with communities, some informants provided information on activities undertaken to engage communities to ensure sustainability of interventions. Community members were interviewed to determine issues of relevance and sustainability of cholera interventions. The community members also provided information on risk factors for cholera and recommendations for preventing cholera.

Population Sampling and Selection
A total of 16 organisations were contacted for interviews. These organisations played key roles during the 2008/2009 cholera outbreak. Thirteen (13) of the organisations were selected on the basis of reporting cholera interventions in Harare Urban District according to the WASH Atlas of 2008 – 2009. Whilst those organisations worked in other provinces or districts responding to cholera, they got selected for reporting having worked in Harare Urban District. The other three (3) were selected on the basis of their strategic roles during the cholera outbreak as well as their current roles in ensuring DRR. These 3 organisations did not specifically report activities done in Harare but their work covered the whole country. Ten (10) household were selected for interviews in 5 suburbs (that is, 2 per suburb) to enable triangulation. The 5 suburbs are Budiriro, Dzivarasekwa, Mabvuku, Mbare and Mufakose. Participants were selected for Focus Group Discussions (FGDs), one comprising of informants (10) from Dzivarasekwa suburb and another FGD with participants (8) participants drawn from Budiriro, Mabvuku, Mbare and Mufakose. Selection of respondents and participants for household interviews and FGDs was done on the basis of having stayed in a chosen particular suburb continuously from 2008 until time of interview. The participants therefore shared a common characteristic of having stayed in an area that was affected by cholera and in a position to account for events.

A combination of purposive and convenient sampling was used in the study. Purposively, the researcher found it appropriate to include some key organisations (Key informants) who played instrumental roles in containing the cholera outbreak. The key informants were chosen on the basis that they are the people directly involved in carrying out activities which led to curbing cholera.

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

Background Information of the respondents

Fig(1) Characteristics of Respondents Source: primary data

Type and Number of Organisations Contacted
The chart above shows the type of organisation and the number of organisations contacted by type (making a total of 13 organisations contacted). The respondents were experts in various fields of development such as health, WASH and DRR.

Except for government and UN agencies, other organisations were asked when they started working in Harare Urban as a way to ascertain whether they moved to Harare Urban as part of cholera response. Of the 8 organisations asked the question, 5 of them already had other programmes in Harare whilst 3 worked in Harare only to respond to cholera.

The community respondents comprised of men and women from Budiriro, Dzivarasekwa, Mabvuku, Mbare and Mufakose suburbs who participated in household interviews and FGDs. The demographics collected for the households include sex, age, and level of education, number of people in a household and main source of livelihood. These characteristics of the respondents give an insight to the units under study. The respondents to the household questionnaire were 10 (6 males and 4 females) whose ages were between 23 and 45. Five (5) of them belong to the 20s age range, 3 to the 30s and 2 to the 40s. Household size ranged from 1 up to 7 persons with a household size of 4 people being the modal value. Households’ livelihoods depend on formal employment (7), casual labour (2) and petty trading (1). The FGDs included different age groups and backgrounds.
Interventions for Cholera Response and Prevention

Cholera interventions are discussed in terms of what was done to reduce cholera during the outbreaks and prevention measures that are on-going encompassing sustainability measures and challenges faced.

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Assistance received by households

Table (1) Assistance to households (n=8)

<table>
<thead>
<tr>
<th>Items received</th>
<th>Number of households</th>
<th>Received from</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buckets</td>
<td>6</td>
<td>NGOs, UNICEF</td>
</tr>
<tr>
<td>ORS</td>
<td>4</td>
<td>NGOs, UNICEF, City council, Community health workers</td>
</tr>
<tr>
<td>Soap</td>
<td>2</td>
<td>UNICEF, UNICEF through Community health workers</td>
</tr>
<tr>
<td>Aquatubs</td>
<td>4</td>
<td>NGOs, UNICEF</td>
</tr>
<tr>
<td>Rubbish bins</td>
<td>1</td>
<td>Council</td>
</tr>
</tbody>
</table>

Interventions were not uniform as shown by table 3. All mentioned providers of assistance are mentioned in the received from column. Non uniformity of items received may be as a result of shortage of items, omission by the respondent or distribution based on targeting certain areas and people.

Table (2) Assistance received by communities (Household and FGD findings)

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Budirro</th>
<th>Dzivarasekwa</th>
<th>Mabvuku</th>
<th>Mufakose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borehole drilling (community and / or school)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean up campaign (cleaning of dumpsite; drainage system; unblocking trenches)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic cholera education at schools</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replacement of sewer pipes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spraying of cholera infected homes / places</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health / Awareness education (community, clinic, IEC materials)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cholera medicines at clinic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conversion of clinic to CTC / tent at polyclinic as CTU</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hygiene NFIs (full / partial)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cholera medicines at clinic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spraying of toilets to kill germs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed water tanks at clinic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of clean water (trucks / access to piped borehole water)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table (3) Interventions in communities and whether they covered most pressing community needs as reported by households (n=10)

<table>
<thead>
<tr>
<th>Suburb</th>
<th>Yes</th>
<th>Somehow</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budirro</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Dzivarasekwa</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Mabvuku</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Mbare</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Mufakose</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: primary data

As shown on the table above, when respondents were asked whether cholera response activities covered most pressing community needs, they gave various reasons which were sometimes divergent in one suburb. In Budirro, boreholes were said to be important because water was a priority since it was erratic and people resorted to shallow wells. Converting clinic to CTC helped because people went there for treatment and survived. Funeral management was said to have helped as no new cases emerged related to attending funerals. However in FGD citing of boreholes was said to be improper as they were put at beer halls and road sides instead of communities where there are people. One respondent said “at beer halls they are urinated on therefore solution at a health hazard and some boreholes do not produce portable water”. It was agreed that the intervention provided solutions as end result showed cholera was managed although proper ration of water was not met because of going to boreholes which are far and people have to use the toilet continuously without flushing.

In Dzivarasekwa, water supply and garbage collection remain erratic and one woman reported that her household also wanted buckets, Jerry cans and water purification tablets but only received soap. In the FGD it emerged that the help provided to the community helped as people were made aware of cholera and went to the tent which was put outside the polyclinic with any diarrhoeal case. The NFIs were reported to be helpful although not everyone got the items but the help got to where it was needed most.

In Mabvuku the boreholes are said to have been drilled late although they helped as clean water was a priority and ORS helped rehydrating quickly. The inadequateness of boreholes in Mabvuku is said to lead people to continue digging wells.

For Mbare, education and accommodation are said to be priorities as community still needs to be educated on the importance of safe water management as some tend to use unsafe water sources (side walk gullies) when there are water shortages instead of turning to the safer boreholes. People are reportedly overcrowded and therefore vulnerable to cholera. Whilst support was given to Mbare, some distributors are said to have hoarded some whilst others did not get. As for sewer pipes that were put in place, the road remained uncovered leading to accidents and community had to cover the holes.

Although water remains erratic, boreholes provided safe water sources in Mufakose leading to end of outbreak and garbage collection has improved. Cholera education led to early reporting of cholera cases.

Risk Factors to Cholera Prevailing in Communities

For all the 5 suburbs, the risk factors to cholera present include overcrowding, erratic water supplies and inconsistent refuse collection. In Mufakose boreholes are reportedly broken down and no service being done hence no working boreholes at the moment leading to unsafe water sources. In Mbare there are still sewage overflows. In Dzivarasekwa raw fish and meat vending is taking place and public toilets are run down especially in Dzivarasekwa1. In Dzivarasekwa2 the toilet was destroyed hence no toilet there anymore. At some public places such as bottle stores people are not using toilets because they are dirty to which it was suggested that pay toilets would be better as they would be clean. Baby pampers are reportedly thrown all over.

On risk perception, 7 households reported to be at low risk of contracting cholera with most of them giving reasons of having knowledge about cholera prevention whilst others reported that they
have not been sick. A Budiriro man reported medium risk citing lack of strict management especially to children as they can eat without washing hands while playing whilst a woman from Dzivarasekwa reported that they are overcrowded at dwelling and toilet is a source of infection. One man from Dzivarasekwa reported high risk since water supply remains critical.

Ensuring Sustainability of Interventions during the Cholera Outbreaks

Most organisations indicated they had sustainability measures in place during the cholera outbreak in Harare Urban District such as monitoring behaviour change, continued demand creation for water purification chemicals through adverts and road shows. The majority of organisations indicated working with local authorities to ensure programme continuity and handing over some activities. Whilst trainings were held during the outbreak, the knowledge would continue to be used as some organisations indicated capacitating health staff (nurses, EHTs, doctors and rapid response teams from city of Harare) with identification of outbreak and other organisations increased their own capacities to help manage and prevent cholera. New guidelines on cholera were produced in 2009 after the first outbreak as recommended by other practitioners in line with case management. One organisation specifically mentioned working with CBOs which can be approached by people as they say CBOs can work effectively with community and have since realised knowledge gained by people in cholera management. A few organisations indicated they did not have sustainability measures with one informant saying “no mechanism during the outbreak but after people got sick they followed what they were taught”.

Coordination of Cholera Response Interventions

Organisations mentioned a total of 11 coordination mechanisms and each organisation being in at least 1 of those coordination mechanisms.

Table (4) Coordination Mechanisms and Organisational Attendance

<table>
<thead>
<tr>
<th>WASH Cluster</th>
<th>Health Cluster</th>
<th>Joint WASH and Health</th>
<th>C4</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>5</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: primary data

Of the 12 organisations which reported being part of coordination mechanisms to help in carrying out their duties, 10 of them reported attending the WASH cluster, 5 reported attendance to the Health Cluster and, 2 report attendance to Joint Health and WASH meetings and 2 attendance to C4 as a result of different roles by organisations. Some were cross-cutting health and WASH hence attendance to more than one mechanism and the need to synchronise activities hence a platform such as Joint health and WASH meetings. However what transpired in another platform would be shared in others. Other coordination mechanisms mentioned include Social Mobilisation, Education Cluster, National Taskforce on Epidemic Prone Diseases, Strategic Advisory Group (SAG), Civil Protection meetings, district coordination mechanisms and heads of agencies forum.

Fig(2) Rating of Cholera Response Coordination by Organisations

On a scale of 1 to 5, 1 being excellent and 5 very poor, organisations rated coordination of the overall cholera response ranging from excellent to poor as shown by fig 10 above. Most organisations gave a satisfactory rating, that is, fair (4) and good (5) with 2 organisations rating poor (1) and excellent (1). The rating depended on various reasons from the informant’s point of view and the researcher sought comments to understand the particular rating. With almost any rating, the majority of informants mentioned some problems especially at the beginning but eventually succeeding to put cholera under control. Almost all informants stated that coordination started poorly with a lot of learning by doing hence confusion and slowly getting to grips with coordination, the competitiveness and being territorial displayed by some players, minimum resources to work with, following the outbreak and a lot of duplication because everyone would bring same stuff to the same area. As noted by one informant the C4 has received regional recognition for team effort in 2010 and the concept has successfully been applied in Haiti and Sierra Leone. It can be argued from the comments given and the timing of other organisations’ interventions that their experiences led them to give a particular rating. For instance a poor rating came from an organisation that responded in the initial phase were there was confusion. Those who rated it as good and excellent stayed long enough to witness improvements whilst those who gave a fair rating had some negative experiences especially where their organisation’s activities were concerned.

Community Involvement in Cholera Response Interventions

There was community involvement reported in cholera prevention activities for all suburbs especially in clean up campaigns and dissemination of cholera information and volunteers were given gratuities. Coordination of activities went down to community level as community members for the selected 5 suburbs rated it. In Dzivarasekwa, coordination was rated as good as good even though people had apathy due to economic hardships that they were too busy with their own activities. People from department of housing and community services from district office mobilised people. Community health workers taught people on health and hygiene. Shortage of items was reported, for instance some did not get soap. Mufakose and Mabvuku gave a fair rating. In Mufakose, it was noted that response was targeted whilst for Mabvuku the problem was everyone wanted to participate in clean-ups because of the gratuities. Budiriro rated coordination poorly as only those with IDs were registered, for instance a household with 10 people with IDs would get 10 buckets yet in some households there was the
greatest need because of a number of children would get less if there were a few adults with IDs. Mbare gave a very poor rating because some community distributors hoarded and sold buckets whilst others did not get.

**Cholera Control and Knowledge, Attitudes and Practices in the community**

When asked what causes cholera, the household respondents knew what causes cholera and what one can do to prevent it. Six (6) respondents knew that germs cause cholera specifically bacteria while others gave risk factors to cholera such as unavailability of clean water and accumulation of garbage, unhygienic environment, unsafe food and water and not washing hands after toilet use.

**Table 5** What a household can do to prevent cholera (n=10)

<table>
<thead>
<tr>
<th>Boil water</th>
<th>Use latrines</th>
<th>Wash hands</th>
<th>Chlorinate water</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>5</td>
<td>10</td>
<td>4</td>
</tr>
</tbody>
</table>

*Source: primary data*

Table above shows responses by number of households on what a household can do to prevent cholera. Hand washing was mentioned by every household which shows its popularity compared to other methods. Other responses given include eating hot food, thoroughly cooking food, keeping food covered, washing fruits and vegetables before eating, using safe water source and safe disposal of refuse. Table below shows what households are actually doing.

**Table 6** What households are doing to prevent cholera (n=10)

<table>
<thead>
<tr>
<th>Boil water</th>
<th>Use latrines</th>
<th>Wash hands</th>
<th>Chlorinate water</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>5</td>
<td>9</td>
<td>2</td>
</tr>
</tbody>
</table>

*Source: primary data*

Differences between the two tables above are as a result of regarding drinking water as already safe whereas in terms of hand washing, 1 male respondent who owns a small business indicated that he does not know if hand washing is practiced in his household as he spends most of his time at work. Whilst people wash hands, 5 households indicated using soap whilst the other 5 use water only. Every respondent indicated washing hands before eating while only female respondents reported washing hands before cooking and after wiping a child’s bottom. Eight respondents reported that they wash hands after defecation (5 males and 3 females). ORS or SSS was very popular as every household reported that they give ORS/SSS to a child or any member of the family who gets diarrhoea whilst 4 respondents reported giving more fluids with 8 reporting visiting a health facility. Going to a health facility was considered for adults if diarrhoea persisted after taking ORS or some home remedies.

As shown by the table above, information on health and hygiene was received. The least information received was on HIV/AIDS and cholera vulnerability which may be due to little information given for this particular topic. The fact that only hand washing rated

100% means other areas need emphasizing too. Even though information on hand washing was received, not every respondent was able to spontaneously give the key times as discussed above and others use water only instead of soap, sand or ash.

**Interventions that Worked Best and Community Emerging Best Practices**

*All key informants reported that public education about cholera (awareness and prevention) helped the most in managing it as people practiced hand washing, point of use water treatment, clean ups with provision of NFIs in a situation where people could not afford. In terms of education, one informant said “people listened when they saw dead people”. Safe food promotion and solid waste management at household level empowered beneficiaries and led to interception of vectors. Provision of temporary water supplies and improvement of logistics and drug supplies, early detection, improvement in case management all helped in fighting cholera. Rapid response, that is, oral rehydration, and getting people quickly to the clinic, coordination of the response and preparedness of all stakeholders to respond to new cholera alerts and donor support helped ending the outbreaks.*

It emerged that people have improved hygiene and for Dzivarasekwa it was reported that cholera is still in people’s minds and people are cautious about drinking water and do not eat at any place associated with risk.

**Interventions to Prevent Cholera after the Outbreaks**

Of the 13 organisations interviewed, 2 did not have interventions after the outbreak as they only responded and not working towards prevention. Of those who continued with prevention, interventions differ by organisation but all working towards ensuring safe water management, sanitation and health and hygiene including technical aspects such as guidance and monitoring.

One FBO and 3 INGOs mentioned carrying on PHHE in areas worked during the outbreak and others have expanded. Of the 3 INGOs, 1 mentioned working with City health department in community health clubs in Dzivarasekwa, Kuwadzana and Glenview making people take care of their health. The other INGO does PHHE crosscutting every project whatever the programme is, it may be agriculture, nutritional support or education and reported that everywhere they work people can identify cholera. Apart from PHHE, one of the 3 INGOs reported rehabilitation or replacement of sewer and water pipes as well as continuous clean up campaigns, training of health staff on cholera treatment, prevention and notification after the outbreaks.

One organisation (INGO) mentioned socially marketing water treatments products through retail outlets by disseminating behaviour change communication through mass media (TV, radio, road shows and in store promotion – creating demand). Another aspect is giving partners technical guidance to do road shows and targeting school children with hand washing promotion intervention at critical times rewarding them for practices partnering with a private company. Another INGO reported that through participation in the WASH Cluster they have lobbied and advocated for improvement in water supply infrastructure and continued hygiene activities in communities until 2012 when they had a programme for Harare Urban.

One UN agency is carrying out urban WASH rehabilitation of infrastructure and hygiene promotion as well as supporting legal and policy framework of national WASH sector resuscitation. Another UN agency continued mobile clinics for every other disease so cholera could be picked along the way whilst another (UN) reported that “we do monitoring through data analysis, attend monthly meetings (Health cluster), use notification system from Ministry of Health and Child Welfare and have supplies ready in case there is a problem”. One government department reported reinforcing preparedness by various stakeholders through coordinating WASH Cluster and Environmental Health Alliance (EHA) by making sure
that monthly meetings are held and that WASH Cluster feeds into urban subcommittee provincial water supply and sanitation subcommittee which is a government structure. Another government ministry reported training health cadres on surveillance and making sure there are no secondary cases and convening meeting once a week (Rapid Disease Notification System) where the City health department attend. Reports on cholera are produced weekly and continuous monitoring of water provision with government analyst. Guidelines on cholera were produced in collaboration with this ministry and it continues training of trainers were epidemiological diseases are concerned.

Current Interventions Reported by the Community

Refuse collection is reported to have improved in Mufakose, Mbare, and Mabvuku. For Mbare and Budiriro, old water and sewer pipes were replaced. In Dzivarasekwa boreholes increased after the outbreak because of persistent water shortages and drainage systems are being repaired. Dzikwa Trust, an orphanage in the community is said to have been providing clean water and food to vulnerable children before, during and after the outbreak.

Sustainability of Interventions after the Outbreaks

Of the 11 organisations that had/have interventions after the outbreaks, 8 ensured sustainability of their activities. By the nature of 2 of the 3 organisations activities, the question was not applicable whilst the other organisation reported that they respond in a humanitarian way in order to save lives so have only ensured preparedness in case there is an outbreak. One INGO continues demand creation and in-store promotion of water treatment products (WaterGuard).

Some interventions such as PHHE as mentioned under current interventions are continued working with local authorities (maintain programmes) to ensure sustainability. One INGO reported 6 months training of PHHE (course covers all diseases and mainly waterborne) to beneficiaries in their programmes (any project) and physical inspection of households. Because of training people can identify disease and notify if others are refusing to seek treatment for further intervention. The organisation has trained some community members to teach point of use water treatment through socially marketing WaterGuard. Other sustainability measures mentioned are formal evaluation of the response to document lessons for replication by one UN agency, participating in clusters to ensure continuity (FBO) and involvement of City health department with coming up of training content and participants. Another INGO reported working with CBOs saying they (CBOs) can work effectively with community. The same INGO reported empowering community and building solidarity with other stakeholders within their areas, for example, influencing City of Harare to improve service.

One government ministry reported ensuring sustainability by “continuing to talk about WASH” and working with development oriented people and ensuring proper refuse management. It has continued monitoring to safeguard the public against public health diseases and notified that an establishment of diarrhoeal disease control programme is to be done.

Ways to Control cholera in Harare and Nationwide Health and Hygiene Promotion

In order to prevent cholera, PHHE was cited is the most effective way through door to door health promotion, participatory clean up campaigns, continued point of use water treatment, promotion of hand washing and waste management countrywide. Continued awareness to predisposing factors to cholera and awareness of the hazard, how to reduce it, educating people about waterborne diseases (infection and prevention) especially targeting schools, as noted school health clubs in Gokwe are said to be very effective. One informant stressed that “with schools, it’s mandatory, it’s a big crowd and children cannot choose not to attend. At home they can say ‘we don’t do that’. Targeting health facilities with hygiene education all the time especially women who go for anti-natal and immunisation can be used to share information about waterborne disease instead of waiting for outbreaks and regular use of media to spread messages were recommended. The prevalent message was prevent and go to the extent of teaching about all killer diseases and importance of breastfeeding. It was also recommended that the health promotion department of city of Harare do more social mobilisation especially in schools.

Restoration of WASH Infrastructure and Provision of Safe Drinking Water

Revamping of WASH infrastructure in order to ensure consistent supply of clean safe drinking water and sanitation was recommended by the majority of informants. Specifically noted was upgrading of water reticulation system, availing sanitation systems in peri-urban areas, having an effective sewage system, early attendance to bursts and upgrading health systems. Ground water was suggested as an option for reticulation as it is less costly in terms of treatment compared to surface water though it requires capacity building.

Capacity Building of Local authorities

With long-term funding mechanisms for Zimbabwe, it was argued that local authorities be capacitated and government should strengthen role of the department of civil protection.

Focus should be on training staff as experienced staff has gone. It was also noted that local authorities need to have service provider (insource or outsource) and service authority in order to function efficiently and to operationalize what was provided in the new WASH policy.

Regular surveillance and alert systems to ensure early detection were recommended as well as emergency preparedness and response in terms of equipping clinics with resources such as drugs and ambulances. The need to sustain the WASH cluster and coordination intervention were argued even though cholera there is no current outbreak but risk remains.

Community Recommendations

In line with the recommendations by organisation key informants, communities argued that responsible authorities should ensure everything is in place that needs to be to fight cholera. Amongst these are:
1) Restoration of old system of refuse collection, general cleanliness (especially at places designated for the selling of fruits, vegetables and food) and consistent clean safe water supply to households to prevent cholera.
2) In Mbare specifically, the immediate need is increasing number of community boreholes to counter the constant water cuts as some people tend to get frustrated with the long queues and turn to unsafe water sources (sidewalk gullies) and hence exposing themselves and in turn the community to cholera whilst looking at constant provision of tap water in the long run.
3) Providing education to the community through various means such as use of a jingle before the news and visits by community
health workers instead of waiting for crisis and targeting school children.
4) Replacing sewer pipes to avoid sewage overflow in the community as children are vulnerable as they play in the roads and get affected and timely attendance to sewage bursts and the spraying of chemicals over the areas where sewage flow.
5) A single case of cholera should lead to rapid response and hospitals and clinics should be well equipped with unexpired cholera medicines and vaccines.
6) If authorities cannot manage to provide services, they should educate people to manage by themselves, for instance garbage disposal.
7) The country should not entirely rely on donor funding and the economy should improve so that people do not engage in activities such as meat vending.

FINDINGS
The response interventions sought to reduce cholera through providing WASH, health and cholera education to reduce transmission and managing those infected to prevent secondary infections and deaths. Prevention interventions are on-going although affected by funding constraints amongst challenges faced by service providers.

In terms of recommendations, organisation key informants and communities gave recommendations to effectively manage cholera amongst them being restoration of public health infrastructure and continued cholera awareness and education.

As discussed, the 2008 – 2009 cholera outbreaks (and other outbreaks thereafter) required humanitarian effort to put it under control. The root causes of the cholera outbreak, discussion of interventions carried out as well as on-going and what still needs to be done were discussed hence objectives of the study met.

Recommendations
An all stakeholders workshop should be held to hear out all players regardless of size. Stakeholders can contribute towards cholera prevention differently be it monetary or expertise in working with special populations (PLWHA, persons with disabilities and youths among others). Given the challenges such as lack of funding, capacity gaps, limited information management and risk associated with dilapidated public health infrastructure they can work together to ensure that the challenges are circumvented and recommendations suggested by organisations and communities are met.

WASH and Health should remain the country’s priorities in terms of national budgeting to ensure that people’s health and lives are protected. Every programme (WASH and health) should have sustainability measures to ensure that its gains are maintained, for instance continued education should be prioritised.

DRR should be prioritised by strengthening prevention through public health promotion instead of responding to emergencies as more resources are needed when responding.

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.

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. 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.

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.

With continued coordination interventions, the results of this study can be disseminated through various clusters and forums so that development practitioners are aware of views of other practitioners and the community needs. All the given recommendations can be utilised to ensure varied mechanisms that complement each other for general awareness and particular targeting.

References
5) Centres for Disease Control (CDC) (2009). Active Surveillance and Mortality Study, Post- Cholera Outbreak in Zimbabwe, CDC, Atlanta GA
9) Harare City Council Health Department Annual Report 2008
Response Interventions during the Cholera Outbreaks

<table>
<thead>
<tr>
<th>Cholera response activities</th>
<th>Number of organisations reporting carrying out an intervention</th>
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</thead>
<tbody>
<tr>
<td>Cholera/health awareness campaigns at community level</td>
<td>11</td>
</tr>
<tr>
<td>Distribution of IEC materials</td>
<td>7</td>
</tr>
<tr>
<td>Cholera/health awareness campaigns at household level</td>
<td>7</td>
</tr>
<tr>
<td>Distribution of full NFI package</td>
<td>6</td>
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<tr>
<td>Distribution of water purification tablets</td>
<td>5</td>
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<tr>
<td>Distribution of soap</td>
<td>4</td>
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<tr>
<td>Distribution of jerry cans and/or buckets</td>
<td>4</td>
</tr>
<tr>
<td>Distribution of clean water</td>
<td>4</td>
</tr>
<tr>
<td>Capacity building of district and community staff on cholera prevention and health awareness</td>
<td>4</td>
</tr>
<tr>
<td>Distribution of water tanks</td>
<td>3</td>
</tr>
<tr>
<td>Distribution of ORS</td>
<td>3</td>
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<tr>
<td>Clean Up Campaign</td>
<td>2</td>
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<tr>
<td>Disinfection and cleaning of dumping sites</td>
<td>2</td>
</tr>
<tr>
<td>Clearing of sewage systems</td>
<td>2</td>
</tr>
<tr>
<td>Case management</td>
<td>2</td>
</tr>
</tbody>
</table>

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