

Acute Watery Diarrhoea and Cholera in the Horn, Central and Eastern Africa:

Learning from experience to improve response in the future

Contents

Policy Briefing	1
Acute Watery Diarrhoea and Cholera in the Horn, Central & Eastern Africa: Learning from experience to improve response in the future	1
Key recommendations to donors, HC & EA government officials and other policy-makers	1

The problem – cholera/AWD in the HC & EA region	3
What is cholera and how is it contracted?	3
Cholera/AWD trends in the Horn, East and Central Africa	4
Cholera or AWD?	4

The impact – social and economic factors	7
Community level	7
National economic impact	7

Challenges to an effective response and examples of good practice	9
Inadequate water and sanitation facilities	9
Conflict and insecurity	9
Poor healthcare and malnutrition	9
Remote, disparate and highly mobile communities	9
Non-declaration, inaccurate or ineffective reporting	10
Coordination and cooperation	10
Cross-border communication	11
Lack of research and understanding of cholera epidemiology in HC & EA	12
Lack of funds	12
Limited preparedness	12

Notes	14
--------------	-----------

Acute Watery Diarrhoea and Cholera in the Horn, Central & Eastern Africa:

Learning from experience to improve response in the future

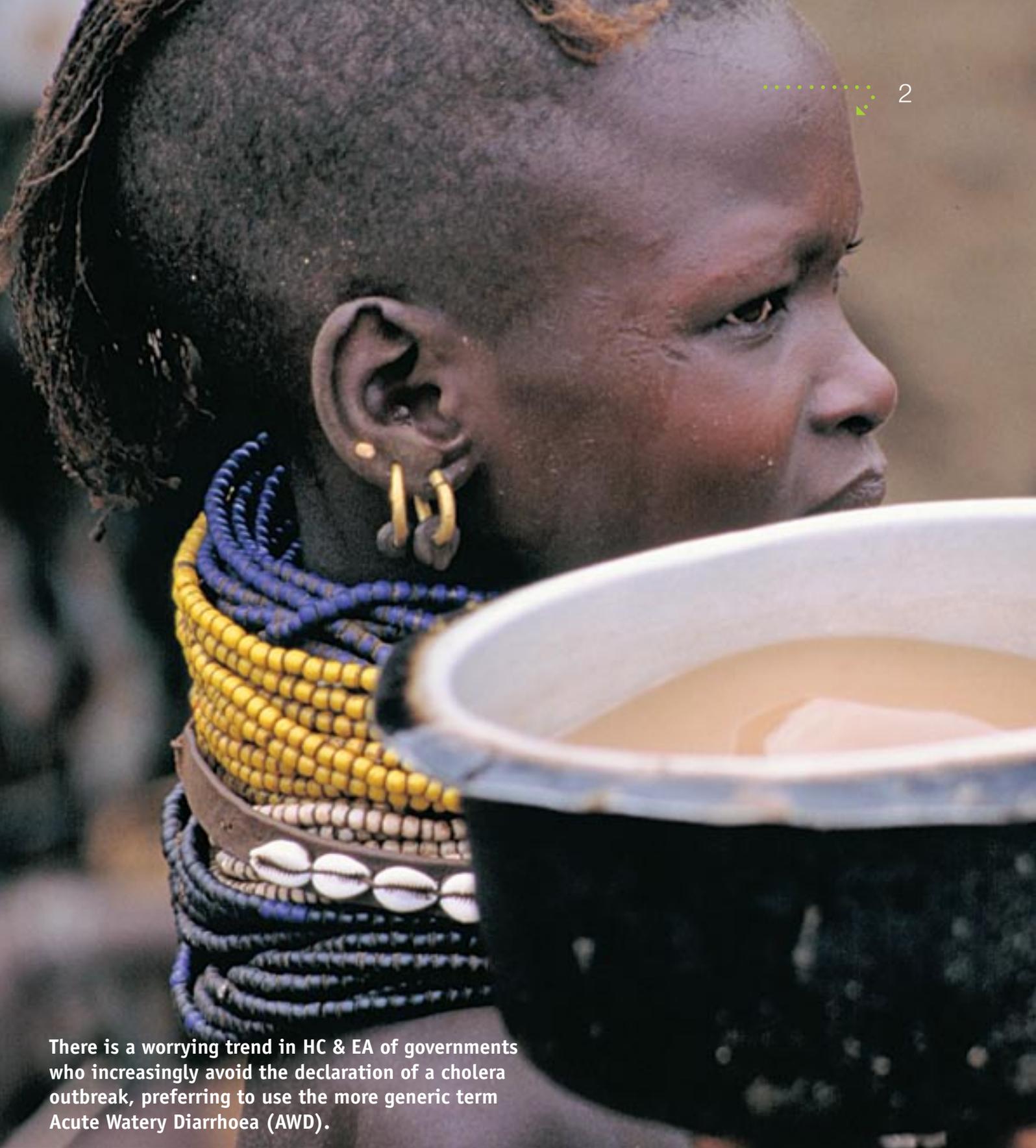
The World Health Organisation classifies cholera as one of the world's 're-emerging' diseases. Across the world, cholera causes about 120,000ⁱ deaths per year or 329 deaths per day. 94% of the world's reported cases occur in Africa.ⁱⁱ

In recent years the Horn, Central and Eastern Africa (HC & EA) region has experienced an increase in the number of countries where cholera is known to be endemic, and major outbreaks are now occurring in countries where the disease was previously unheard of. In the midst of this growing pandemic it is essential that humanitarian and development actors develop a better understanding of cholera trends in the HC & EA region, and use examples of best practice to improve their response in the future. This policy briefing is drawn from a larger research report commissioned by Oxfam GB and aims to raise the awareness of donors, government officials and other policy-makers of the impact of cholera, and to push cholera preparedness and response higher up the regional agenda.

Key recommendations to donors, HC & EA government officials, and other policy-makers:

1. Take the threat of cholera and its impacts seriously and use the terms 'AWD' and 'cholera' properly across the region.
2. Responses must be fast, effectively coordinated, resourced and sustained - in the same way as for other rapid onset emergencies.
3. Preparedness needs to be undertaken with urgency across the region.
4. More attention to prevention activities and building the capacities of governments, community level health workers and establishing the widespread use of home based oral rehydration solutions to minimise the impacts of outbreaks.
5. Increase learning for more effective responses.

These recommendations support the Declaration by the WHO Member States in Africa made at the Forty-fifth World Health Assembly in 1992, which identifies a strategy for the control and prevention of cholera in Africa; it is recommended that more urgent attention and resources be given to its effective implementation in the Horn, Central and Eastern Africa.

A close-up profile of a woman with traditional beaded jewelry and a white bowl of liquid. The woman has dark skin and is wearing multiple layers of beaded necklaces in blue, yellow, and white. She is holding a white bowl filled with a light-colored liquid. The background is blurred.

There is a worrying trend in HC & EA of governments who increasingly avoid the declaration of a cholera outbreak, preferring to use the more generic term Acute Watery Diarrhoea (AWD).

The problem



The problem – cholera/ AWD in the Horn, Central & Eastern Africa

What is cholera and how is it contracted?

Cholera is a diarrhoeal disease, which is caused by infection of the intestine through the ingestion of the bacterium *Vibrio cholerae*. The current seventh pandemic has been caused by the VC O1 El Tor serogroup (a specific strain of cholera). This is a much hardier strain than the Classicalⁱ, which can survive for a longer time in the natural environment, has a more rapid growth rate following inoculation in foods and evokes less immunity than the Classical strainⁱⁱⁱ. It has also been shown to have more asymptomatic² cases versus symptomatic. As a result of these factors, this strain of the disease has been able to spread quickly and over vast distances.

Without immediate rehydration death can occur within hours for those suffering from severe symptoms of cholera. Without appropriate treatment the case fatality rate (CFR) may be as high as 50 per cent, but with appropriate rehydration the CFR can be kept to less than 1 per cent^{iv}.

Transmission can occur through:

- Eating foods that may have been contaminated through the handling process or from being poorly cooked;
- Drinking contaminated water, particularly from sources with high numbers of copepods³ associated with zooplankton blooms, or water contaminated after storage;
- Person to person contact when there is poor hygiene and sanitation including through transmission of the excreta or vomit from an infected person;
- Poor handling of dead bodies at funerals and through funeral gatherings and feasts;
- Cross-contamination in health centres or cholera treatment centres where hygiene is inadequate;
- Eating contaminated shellfish.

Contexts known to be particularly vulnerable to cholera transmission include where there are:

- Areas of poor water, sanitation and hygiene practice;
- High poverty and malnutrition;
- Ecological disturbances and seasonal variations in temperature and after flooding (in endemic areas);
- Poor urban high density and poorly serviced areas;
- Particular cultural practices which aid the transmission, for example the handling of dead bodies;
- Coastal areas, areas around water bodies and around transport links.

It is now understood that environmental factors are also playing an increasingly significant role in cholera epidemics.^v

¹ The serogroup known to have caused the sixth pandemic.

² In medicine, a disease is asymptomatic while the patient does not experience any noticeable symptoms. Asymptomatic diseases may not be discovered until the patient undergoes medical tests.

³ Copepods are tiny crustaceans, which live among plankton and are an important food source for many fish. They are native to seas and lakes.

...cholera is mainly a disease of the poor and its existence is an indication of the level of poverty, poor access to clean water, sanitation, and hygiene facilities in any given country.



Cholera/AWD trends in the Horn, East and Central Africa

In the HC & EA region both Sudan and Ethiopia faced very large outbreaks in 2006, which spread with immense speed and over vast distances. After two years with no reported cholera outbreaks, Somalia faced the largest outbreak in its history in 2007 against a backdrop of large population displacements and insecurity, presenting a huge challenge to delivering an effective response.

Kenya, DRC, Tanzania and Uganda have all also had outbreaks in recent years. Relative peace and stability in these countries has enabled them to learn about the effectiveness of response and to develop appropriate response guidelines and mechanisms. Kenya has not had a major epidemic since 1998/9, and most of its outbreaks occur along the borders with other countries.⁴ Uganda and Tanzania have reduced their CFRs significantly. The Democratic Republic of Congo (DRC) has also demonstrated a generally decreasing trend for CFR.

Cholera or AWD?

There is a worrying trend in HC & EA of governments who increasingly avoid the declaration of a cholera outbreak, preferring to use the more generic term Acute Watery Diarrhoea (AWD). Cholera a kind of AWD, considered the most severe as it spreads quickly and may lead to death. Its presence must be confirmed by laboratory analysis.

Often cholera is reported to the WHO as AWD in order to avoid the perceived negative consequences of reporting cholera, while at the same time acknowledging a severe epidemic of diarrhoeal disease.⁴ⁱ In the HC & EA region Ethiopia, South Sudan and Somaliland have all used the term AWD in 2006-2007, even though cholera is known to have been the causative agent for many of the cases reported.

Using the AWD classification inappropriately leads to an under-estimation of the problem and therefore the level of response needed. Both Southern Sudan and Ethiopia had very large outbreaks in 2006, but neither declared

⁴ The Disease Outbreak Monitoring Unit (DOMU) of the Ministry of Health tracks which cases are endemic and which are imported.



the situation an emergency. This prevented the raising of adequate resources to launch or sustain an effective response, especially since donor emergency funds are often available for responding to cholera and not general AWD.

There are many possible reasons for this perception of stigma associated with the declaration of cholera in the region, including:

- The fact that cholera is mainly a disease of the poor and its existence is an indication of the level of poverty, poor access to clean water, sanitation, and hygiene facilities in any given country.
- The political risk for the countries leaders who could be accused of not doing enough to prevent the disease.
- Concern over the risk of trade and travel restrictions and other economic implications.

By contrast, Kenya, Tanzania, Uganda, and DRC have shown good practice by transparently declaring their outbreaks of cholera. Ministries of Health in these

countries cite the following reasons transparency is important:

- The faster you declare it, the faster you can overcome it.
- If you have information on an outbreak, it is better to let the countries importing goods to know so that they can check / test if there is a problem with their internal controls. If they find no problem they will continue importing the product.
- Declarations help governments meet their international obligations in a “sincere” way.
- It would be impossible to hide cholera, as the media is very quick to pick up on it.
- It allows the government to better coordinate with other stakeholders and gain access to available resources.
- When patients know there is a cholera outbreak, they take the illness more seriously.



New carers for both children and sick adults take on additional responsibilities often without having the income or the time to care for them properly.

The impact



The impact – social and economic factors

Community level

Oxfam's research in cholera-affected communities has identified a number of significant impacts of cholera on households and communities in the HC & EA region. Overall cholera disproportionately affects the poor, as limited access to clean water, inadequate sanitation, little or no hygiene education, and higher levels of malnutrition all make people more vulnerable.

At the household level, children with parents who suffer or die from cholera are left without their principal carers. New carers for both children and sick adults take on additional responsibilities often without having the income or the time to care for them properly.

Families may experience a loss of income, followed by a loss of assets including livestock if one of their working family members is affected by cholera. In some cases, if the head of the household and sole breadwinner dies, families are left completely destitute, dependent on relatives or neighbours. Family healthcare may suffer or children may be taken out of school if a family's income declines significantly. It has been reported that in affected communities food and tea shops are closed down, local businesses stagnate and whole communities suffer a loss of income. The treatment of cholera also imposes an additional financial burden on the families of victims. They need extra money for the cost of medicines and for nutritious food to help the sick members of the family recover.

National economic impact

Responding to a cholera/AWD epidemic is a significant cost for resource-constrained national governments in the region. Especially where no or limited preparedness measures have been put into place the cost can run into the multiple millions of dollars for a response to a major outbreak.

Costs might include:

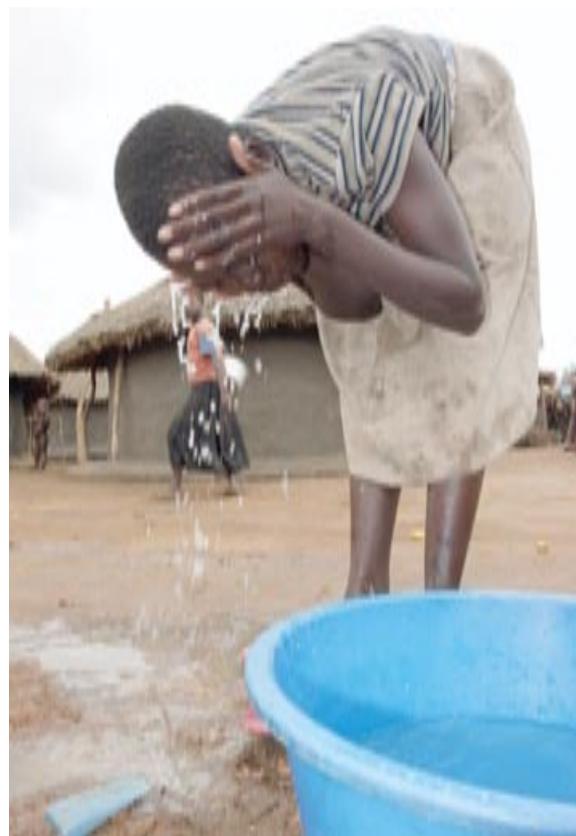
- Management costs at national, regional, district and community levels;
- Coordination between governments, UN agencies, NGOs, the Red Cross Movement and other actors;
- Use of the media over a sustained period – radio, newspapers, television;
- Significant costs of human resources required to staff the outbreaks;
- Training for staff at all levels including community and religious leaders;
- Costs of equipment for the treatment centres such as: tents, plastic sheeting, water and sanitation equipment, medicines, hygiene promotion materials, chemicals and consumables;

- Transport costs including fuel and drivers – logistics is a significant resource required during an outbreak;
- International procurement and import costs for major items such as IV fluids, cholera treatment kits etc;
- Community mobilisation, water disinfection, mobilisation for sanitation;
- Regulation of food and food movements;
- Cross-border prevention activities.

In addition to these direct costs, there is great concern regarding potential financial losses from a fall in trade or tourism. This perception may have significant impact on government policy decisions and ultimately can prevent national governments from reacting swiftly and appropriately to contain the disease.

There are two regularly quoted examples of countries penalised through trade restrictions since the beginning of the 1961 pandemic. The first was the 1991 cholera outbreak in Peru where a reported US\$770 million was lost due to trade and travel bans. The second was during a fish ban placed on Tanzania by the EU in 1998, where a reported US\$36 million was lost (this ban also affected Kenya, Uganda and Mozambique). However, since the removal of the fish bans in East Africa in 1998 and confirmation by the Director General of WHO that such bans are not required there has been no documented evidence of further bans due to cholera outbreaks in the HC & EA region.

Since then Tanzania, Kenya and Uganda have continued to declare outbreaks of cholera without suffering bans or a significant loss of trade income. Indeed it is unlikely that bans would be placed for the majority of products today as long as hygiene procedures for handling and processing are up to the required standard as agreed with the EU, USA and other importing nations. In addition, current travel advice from most governments does not recommend restricted travel because of a cholera outbreak; rather travellers are warned to take extra precautions.





Without basic sanitation facilities and access to clean water, efforts to combat the disease will be severely restricted.

Challenges



Challenges to an effective response and examples of good practice

Inadequate water and sanitation facilities

The poor coverage of adequate water and sanitation infrastructure in the region is a major factor hindering an effective response to cholera/AWD outbreaks. Without basic sanitation facilities and access to clean water, efforts to combat the disease will be severely restricted. In sub-Saharan Africa only 58% of the population has access to improved water sources and 36% improved sanitation (2002 figures)^{vi}. To prevent cholera/AWD outbreaks completely the water and sanitation situation will need to improve right across the region. Whilst this is a challenging task and a longer term goal, the MDGs provide a target that countries are already aiming for. It also makes economic sense in the long run. Hutton et al (2006) estimate that the benefit for improving water, sanitation (independently) and for improving both water and sanitation together to MDG levels will give a gain of US\$2.8, US\$6.6 and US\$5.7 respectively for every \$US1 invested^{vii}.

Conflict and insecurity

Social disruption from wars causes the disruption of basic service provision, increases poverty and can ultimately lead to internal and cross-border displacement^{ix}. Displacement of people is frequently associated with reduced access to the population for those responding to the cholera outbreak. For example, in Somalia in 1997 it was noted that the Case Fatality Rate (CFR) from a particular Cholera Treatment Centre (CTC) in north Mogadishu was at 3.2% even though there was almost optimal management of the CTC. The additional deaths were attributed to the late arrival of cases as the security situation scared people from moving in town during the night^x.

Poor healthcare and malnutrition

The lack of healthcare facilities and trained healthcare professionals present an enormous challenge to cholera/AWD response. Existing healthcare problems in local communities also mean that people may be more susceptible to the disease or are less likely to make a good recovery. Sub-Saharan Africa has the smallest ratio of [trained] health workers per person globally. Underlying malnutrition may also increase the risk of cholera mortality and under nourished infants, particularly those deficient in Zinc and Vitamin A, appear to be more susceptible to death from diarrhoeal disease^{xi}.

Setting up and managing CTCs or providing hygienic treatment in hospitals and clinics is a general observed weakness across countries in HC & EA. More training of staff and a standardisation of approaches are urgently needed for the appropriate hygiene, sanitation and isolation aspects of dealing with cholera/AWD patients in health facilities and CTCs.

There is also an urgent need to ensure that community level health workers and communities know what to do in the immediate days after an outbreak begins. This is because it is the people on the ground, the village community health workers and the health workers in remote health centres, or the community members themselves, who may have to face the outbreak on their own for the first one or two weeks while the problem is identified, lab confirmed and support is mobilised. This is also the period where there is the highest risk of death for cholera victims.

In an example of good practice, community health workers in Tanzania, Kenya and Ethiopia are known to play a key part in the surveillance and responses to cholera/AWD. In Kenya they are trained to give IV drips and antibiotics as well as other health care provision skills^{xii}.

Remote, disparate and highly mobile communities

Cholera/AWD outbreaks are likely to spread more rapidly where there is high mobility. HC & EA is characterised by highly mobile and often remote populations, either from pastoral migrations, trade or from Internally Displaced People (IDPs) or refugees. Accessing these populations during a cholera/AWD outbreak can also be extremely difficult.

Access to healthcare facilities depends on readily available transportation for patients too ill to walk. Since in the HC & EA region patients may have to travel vast distances to access care it is all the more important to ensure that communities are aware of and practice home-based rehydration in response to any diarrhoea. In cholera response this practice can save lives. It is also important during major outbreaks to have decentralised oral rehydration solution (ORS) points and health facilities near to the outbreak location. However, these facilities then require more staff, more training and equipment, as well as more logistics to provide this equipment and support.

In an example of good practice, the Ethiopian Government mobilised large numbers of health staff and student nurses in and sometimes across different regional states, in order to support the management of health facilities and CTCs^{xiii}. This emphasis on a decentralised response to the outbreak was particularly crucial during the initial stages. The use of Geographical Information System (GIS) mapping by the International Rescue Committee in

Ethiopia helped track the changing caseloads of infected people by area. The IRC then used these dynamic maps to convince communities in surrounding areas to take precautions against AWD^{xiv}.

Non-declaration, inaccurate or ineffective reporting

The emerging trend towards non-declaration and its associated risks has been discussed in a previous section. Other constraints to effective reporting include:

- Poor surveillance and testing systems (including sentinel sites), particularly in rural areas where cholera is most likely to be endemic.
- Lack of standardised testing facilities in all countries e.g. the African Medical and Research Foundation (AMREF) laboratory in Kenya is also being used for Somaliland and Southern Sudan.
- Limited experience and knowledge to be able to identify the symptoms.
- Inability of people in rural areas to reach health centres and hence cases not being included in health data⁵.

Slow or inaccurate reporting also has an impact on the speed of response. From Oxfam discussions with a range of people working in different country contexts it is clear that the speed of response is essential. Even when countries are being transparent and making significant effort to respond quickly, the response may take between one to two weeks, or even longer (up to 4 weeks was noted in one case), which poses additional risks and reduces ability to stop the spread. It is essential that cholera outbreaks are reported accurately and immediately to ensure the quickest response possible.

Kenya provides an example of good practice. The most vulnerable areas to cholera, which are along the border areas in Kenya, have their own capacity at district level to test for different strains of cholera and antibiotic resistance, which potentially can speed up the time for laboratory confirmation⁶. In 2007 the WHO provided improved equipment to the most vulnerable districts to boost their capacity to test.

Coordination and cooperation

Effective coordination and transparency in the sharing of information are crucial for an effective response. Because of the nature of cholera/AWD outbreaks, which require a response from the medical and water, sanitation and hygiene (WASH) sectors, inter-sector collaboration and communication is vital. However, in many countries the Ministry of Health and the Ministry of Water Resources work separately with limited communication or collaboration. The critical areas of sanitation and hygiene promotion often falls through the cracks between both Ministries, with both claiming some involvement but none taking responsibility.

The critical areas of sanitation and hygiene promotion often falls through the cracks between both Ministries, with both claiming some involvement but none taking responsibility.



⁵ In most contexts the deaths due to cholera are being reported from health facilities only and not from deaths in local communities.

⁶ In Kenya the policy is for samples to be sent to District and National level laboratories at the same time, which also speeds up the confirmation process.



Within the Cluster Leadership Approach (CLA) there are separate Health and WASH Clusters with WHO and UNICEF being the respective Cluster Leads. Cluster Leads have a responsibility to make sure Inter-Cluster communication happens^{xv}. In an example of good practice, significant effort was made during the initial phases of the AWD outbreak in Ethiopia in 2006 to bring the WASH, Health and Nutrition Emergency Task Forces and sector actors together. However, these efforts were not sustained over the long-term at the Federal level, which limited their impact.

There is a dilemma for the WHO between the sharing of information as per its role as Cluster Lead for Health and its commitment to confidentiality with respect to the IHR 2005^{xvi}. In sensitive environments, this dilemma will pose a number of challenges. The WHO's position on sharing outbreak data requires clarification to ensure effective cooperation and to prevent misunderstandings between sector actors in the future.

One of the challenges for sustaining effective coordination over long periods of time in countries where there are repeated emergencies and long epidemics is the limitations of staff time and energy when they are faced with competing demands. There is a need to recognise the demands placed by a major epidemic in the same way as those created by an earthquake or a major flood event. Additional, dedicated staff should be brought in to facilitate coordination and response. In an example of good practice the WHO employed a number of local consultants to support the government in coordinating its response to the cholera/AWD outbreak in both Ethiopia in 2006/2007 and in North Sudan in 2007^{xvii}. UNICEF in its role as the Cluster Lead for WASH should also be following this example of good practice and ensuring adequate capacity to support coordination at all levels during sustained and large outbreaks.

Cross-border communication

Cholera/AWD outbreaks affect not only the country with the epidemic but also its neighbouring countries. Therefore inter-country and cross-border communication is a key part of effective preparedness and response. The issue of transparency is very important in relation to cross-border communication, as it is difficult to communicate openly when an outbreak is not being declared in one of the affected countries.

In an example of good practice the Ministry of Health in Kenya has developed protocols for response to cases of cross-border infection, including stopping the movement of food and intensified surveillance and community awareness-raising along border areas, as well as instant alerts to neighbouring districts.

There have been a few formal efforts to develop cross-border communication in the Great Lakes region and between Sudan, Ethiopia and Eritrea. Most recently, the

WHO and UNICEF have held two meetings in 2007 for Kenya and Somalia on cross-border infectious diseases which have been fed back to the respective governments. It is hoped that Ethiopia will soon join this group. There is also a Health Desk for the East African Community, which promotes cross-border communication, and an intention has been noted in the WHO 'Sudan Health Highlights' for the sharing of information on the situation and interventions in adjoining areas under the umbrella of WHO^{viii}. The WHO and UNICEF should be encouraged and supported by national governments, donors and other sector actors in their efforts to strengthen inter-sectoral cross-border communication.

Lack of research and understanding of cholera epidemiology in HC & EA

There has been limited scientific research undertaken in Africa which tracks in detail the movement and epidemiology of cholera. There are some examples but research and understanding has not been as widespread or as well documented as in Asia. The Kenyan Government has a dedicated Disease Outbreak Monitoring Unit (DOMU) and has undertaken research in the past to better understand the transmission risks in Kenya. However, it has not documented its learning. A couple of examples of in-depth research have been identified from the region, in 1997 in relation to cholera transmission in Mogadishu by WHO and MSF-Spain covering the outbreaks from 1994-7^{ix} and also a more recent research on the cholera outbreaks in the Democratic Republic of Congo (DRC) by the Ministry of Health and the French University of Franche-Comté^x.

In the HC & EA region it also appears that the different strains of cholera are not being tested on a regular basis (which would need confirming from a range of testing institutions)⁷ and assumptions are being made relating to the analysis. Until scientific research can follow epidemics and outbreaks in endemic areas in detail (including throughout the seasons); many of the assumptions being made as to the mode of transmission and mechanisms for responding to outbreaks in the region, will remain unproven. It is recommended that to better understand the epidemiology in HC&EA more funding is needed to undertake dedicated tracking, scientific research, to help identify risk factors early on in the outset of outbreaks and to share learning from outbreak responses.

Lack of funds

The Oxfam research in Kenya has identified a lack of readily available funds for quick emergency response teams, for communications and for keeping laboratory reagents up to date. The availability of immediately accessible resources is critical for an effective response. Whether this is for central government disease control

emergency teams to be able to provide quick back up support, to pay for additional staff, transport, fuel, equipment or medicines. Funding for the response to the AWD outbreak in Ethiopia in 2006-2007 was also a considerable constraint for Oxfam and other NGOs.

The Ministry of Health at national level in Tanzania has an epidemiological unit, which responds when there is an outbreak, which can access funds quickly by applying to the fund for disasters held by the Prime Ministers Office. This is an idea that could be developed by other countries. National governments and international donors should help to establish immediately accessible emergency contingency funds for cholera/AWD outbreaks.

Limited preparedness

One of the best ways of ensuring an effective response to an outbreak of cholera/AWD is to be prepared for it in advance. Preparedness for responding to major epidemics in HE & CA is generally weak, but where preparedness had been undertaken and/or major supplies were available they have proven essential in ensuring a speedy response. Sustained staff training on effective prevention, preparedness and response, and the pre-positioning of essential supplies are a key part of any emergency preparedness plan. In Southern Sudan pre-positioned stocks, which were procured by UNICEF ready for returnees in 2006, were successfully used for a cholera/AWD outbreak response, whereas the stocks of UNICEF in Ethiopia were quickly depleted.

There are a number of preparedness and response plans currently available in the region, some elements of which provide examples of good practice. These include:

- The Ministry of Health's DOMU in Kenya has developed clear 'Guidelines on Cholera Control', which has built on the lessons that have been learnt over the years and should be used as an example of good practice for other countries in the region.
- Somalia has produced the 'Cholera Prevention and Control Plan for Mogadishu, 2004' and the UNICEF Somalia 'Cholera Preparedness and Response Plan, 2006/7'. Both are clear on documenting who will be responsible for each element of the response, although it is not clear how the UNICEF plan ties in with the plans of WHO and the plans of the country as a whole.
- In Ethiopia, the Regional National State Bureau of Health with the collaboration of INGOs and the UN developed the 2006 'Acute Watery Diarrhoea (AWD) Emergency Plan for Oromia Region' during the outbreak itself.
- The WHO and the Global Cholera Task Force has developed a range of useful materials for the sharing of good practice in responding to cholera outbreaks.

⁷ WHO has supported laboratories in vulnerable districts in Kenya with testing equipment and consumables, which do not include testing for El Tor or Classical. AMREF tests for samples in Kenya, Somaliland and South Sudan, also does not test for El Tor or Classical on a regular basis, although they sent samples a few years ago to a laboratory in Italy when El Tor was confirmed.

Whilst these documents contain useful information and are well respected, experience from the HC & EA region suggests that WHO should strengthen the guidelines to give more emphasis to the importance of isolation, hygiene and sanitation in treatment centres and staff training.

- The Médecins sans Frontières, 2004, 'Cholera Guidelines' have been widely used and are particularly useful in the level of detail they provide on the practical aspects of response. A simplified version of these guidelines would also be useful for small government health centres or facilities where there is no sustained external support.



Notes

- ⁱ Chaignat, C. (2007) 'Keynote Speech: Facts on Cholera', paper presented at a conference, 3rd Emergency Environmental Health Forum: Cholera Prevention and Control, Delft, The Netherlands, 3-4 May 2007
- ⁱⁱ 2001 figures. WHO (2003) 'Cholera Unveiled'. Global Task Force on Cholera Control. http://whqlibdoc.who.int/hq/2003/WHO_CDS_CPE_ZFK_2003.3.pdf (last downloaded by the author, March 2008)
- ⁱⁱⁱ WHO (2001) 'WHO Report on Global Surveillance of Epidemic-Prone Infectious Diseases; Chapter 4, Cholera', WHO/CDS/CSR/ISR/2000.1, www.who.int/emc (last viewed by the author Nov 2007)
- ^{iv} WHO (2004) 'Cholera Outbreak, Assessing the Outbreak Response and Improving Preparedness', Geneva: Global Task Force on Cholera Control
- ^v Lipp, E. K., A. Huq, & R. M. Colwell (2002) 'Effects of global climate on infectious disease: the cholera model', *Clinical Microbiology Reviews*, Oct 2002, 757-70
- ^{vi} WHO (2001) 'Cholera' in WHO WHO Report on Global Surveillance of Epidemic-Prone Infectious Diseases; WHO/CDS/CSR/ISR/2000.1, www.who.int/emc (last viewed by the author Nov 2007)
- ^{vii} Gaffga, N. H., R.V. Tauxe & E. D. Mintz (2007) 'Cholera: A new homeland in Africa?', *Am. J. Trop. Med. Hyg.* 77(4): 705-13 (with references to a range of other documents)
- ^{viii} Hutton, G and L. Haller & J. Bartram (2006) 'Economic and Health Effects of Increasing Coverage of Low Cost Water and Sanitation Interventions', United Nations Development Programme Human Development Report, 2006, Swiss Tropical Institute and the World Health Organisation
- ^{ix} Gaffga, N. H., R.V. Tauxe & E. D. Mintz (2007) 'Cholera: A new homeland in Africa?', *Am. J. Trop. Med. Hyg.* 77(4): 705-13 (with references to a range of other documents)
- ^x Schick, T (2007) 'Cholera Transmission in Mogadishu, Somalia, A Case-Control Study', WHO & MSF-Spain with support of the Global Task Force on Cholera and Swiss Disaster Relief Unit, report to the WHO-Somalia Office, 27.12.07
- ^{xi} Gaffga, N. H., R.V. Tauxe & E. D. Mintz (2007) 'Cholera: A new homeland in Africa?', *Am. J. Trop. Med. Hyg.* 77(4): 705-13 (with references to a range of other documents)
- ^{xii} Oxfam research, 2007.
- ^{xiii} WHO (2007) 'Country Offices Monthly Report, Emergency Humanitarian Action (EHA) / Ethiopia Programme, Month of September 2007' and ^{xiii} WHO (2007) 'Emergency and Humanitarian Action (EHA), Weekly Update / Ethiopia', Week 26 (from 25 June to 1 July 2007)
- ^{xiv} Kahia, J and J. Parker, J.K. Wainaina (2007) 'Pooling to pull together – experience and challenges faces implementing a public health response to AWD Outbreak in Ethiopia', paper presented at the 3rd Emergency Environmental Health Forum: Cholera Prevention and Control, Delft, The Netherlands, 3-4 May 2007
- ^{xv} Inter-Agency Standing Committee (2006) 'Preliminary Guidance Note on Implementation of the Cluster Leadership Approach', 15 June 2006
- ^{xvi} WHO (2007) 'Notification and Other Reporting Requirements Under the IHR (2005) IHR Brief No 2', www.who.int/ihr (last downloaded by the author, Nov 2007)
- ^{xvii} WHO Country Office of Sudan, Regional Office for the Eastern Mediterranean (2007) 'Sudan Health Highlights, Emergency & Humanitarian Action (EHA)', Week 34 of 2007
- ^{xviii} WHO Country Office of Sudan, Regional Office for the Eastern Mediterranean (2007) 'Sudan Health Highlights, Emergency & Humanitarian Action (EHA)', Week 34 of 2007
- ^{xix} Schick, T (2007) 'Cholera Transmission in Mogadishu, Somalia, A Case-Control Study', WHO & MSF-Spain with support of the Global Task Force on Cholera and Swiss Disaster Relief Unit, report to the WHO-Somalia Office, 27.12.07
- ^{xx} Bompangue, D, Giraudoux, P, Handschumacher, P, Piarroux, M, Sudre, B, Ekwanzala, M, Kebela, I & Piarroux, R (2008) 'Lakes as a source of cholera outbreaks in the Democratic Republic of Congo', *Emerging Infectious Diseases*, 2008 (in press)

For further information on the research, a full range of recommendations for all sector actors, and specific recommendations by organisation type, refer to the main research report: OXFAM-GB (2008) 'Regional policy implications and responding to acute watery diarrhoea & cholera in the Horn, Central & Eastern Africa: Learning from experiences: improving for the future'.

The full research report can be obtained from:
Nona Zicherman, HECA Regional Humanitarian Coordinator,
Oxfam GB,
nzicherman@oxfam.org.uk,
+254 20 2820000

