THE ZIMBABWE HEALTH CLUSTER

Cholera Outbreaks

Coordinated Preparedness and Response

Operational Plan

Harare, November 2008

Mozambique
Zambezi Escarpment
Zambezi River
Kariba
Muzarabani
Nyamapanda
Zambia
Karoi
Bindura
Lake Kariba
Bindura
ZIMBABWE
worldatlas.com
Chinhoyi
Harare
Zambezi River
MIDLANDS PLATEAU
Lake Manyam
Chitungwiza
Victoria Falls
Kadoma
Mutare
Hwange
Kwekwe
Cashel
Bembezi River
Gweru
Chipinge
Masvingo
Bulawayo
Chiredzi
N
Gwanda
Botswana
Beitbridge
Limpopo River
South Africa
0 Km. 150
0 Miles 100

Background

The Zimbabwe health cluster has developed this operational plan in order to be able to mount a predictable and coordinated response to the unprecedented outbreak of cholera in Zimbabwe that has caused an estimated 9000 cases and close to 400 deaths over a three months period since the outbreak started in September 2008. This is the most serious outbreak in Zimbabwe since ever.

The health cluster formed a small working group comprising the World Health Organization, International Committee of the Red Cross and International Organization for Migration, which conducted a rapid assessment of ongoing cholera response interventions and developed an operational plan. The plan was then presented to the health cluster, which included representatives from other clusters and donor agencies, and feedback sought.

While the operational plan focuses mainly on Cholera, the framework shall be used to address other outbreaks such as a suspected outbreak of Anthrax that is affecting a few districts. We hope that the plan may also be a ground work for coordinated response to other epidemics and public health emergencies.

This document can be used as a framework for operational planning and resource mobilization

1) Strength and weaknesses of current response

1.1 Outbreak detection and confirmation:

Strength	Weakness
❑ Many alerts (could be highly sensitive to pick up potential outbreaks); ❑ Initial control measures often timely; ❑ Leadership of local health authorities; ❑ Proactive participation of humanitarian agencies;	❑ Poor EWS; lack of regular surveillance reports; ❑ Background information on outbreak alerts often inadequate; ❑ Flow of information and data inconsistent, disorganized and irregular ❑ Initial control measures lack the necessary resources to mount a proper response ❑ Limited district and provincial laboratory capacity; ❑ No epidemiological investigations carried out

1.2 Organization of the Response:

Strength	Weakness
❑ Leadership role of the Provincial , District and City health authorities; ❑ Willingness and commitment of NGO and UN partners to provide support; ❑ Summary daily information being provided by MOHCW	❑ Insufficient emergency stock of drugs, materials & supplies; ❑ Inadequate laboratory confirmation capacity; ❑ Insufficient number and type of personnel; ❑ Lack of predictable availability of vehicles and fuel; ❑ No food provision for staff and patients; ❑ High case fatality rate; inadequate transmission control activities;

1.3 Information management:

Strength	Weakness
❑ Willingness of MOHCW and humanitarian agencies to share information; ❑ MOHCW providing daily number of cases and deaths as reported by PMO; ❑ Humanitarian organizations sharing information for operational planning; ❑ Cluster and inter-cluster cholera task force groups activated;	❑ Line lists are not kept up-to date & not forwarded to WHO for analysis; ❑ Information flow has been erratic; no communication protocols; ❑ Lack of necessary personnel and means for timely data transmission; ❑ Limited feedback mechanism to cholera responders and other partners; ❑ No M&E framework;

1.4 Case management and reduction of mortality:

Strength	Weakness
❑ CTCs set up where required; ❑ CTCs accessible (?????) ❑ Availability of drugs & supplies ❑ Excellent contribution some partners ❑ Treatment guidelines available ❑ Active case finding attempted	❑ Delayed decision to set up CTCs; ❑ No visible guidelines in CTC's; ❑ Inadequate number of & training for personnel; ❑ Shortage of some materials (such as canula, disinfectants) ❑ Inadequate patient monitoring during treatment; ❑ No timely monitoring of CFR for corrective action; ❑ Cases reporting to regular clinics may not have been captured; ❑ Community mobilization for active case finding not strong;

1.5 Hygiene in CTCs:

Strength	Weakness
❑ Good organization of CTC; ❑ Chemicals for disinfection available; ❑ Capacity for providing safe water exists; ❑ Cluster and inter-cluster cholera task force groups activated;	❑ Not enough space and cholera beds for the number of cases admitted; ❑ Number of support personnel not adequate; ❑ Insufficient quantity of water ❑ Inadequate water storage capacity of health facilities; ❑ Regular inventory of emergency supplies lacking; ❑ Mapping of CTC and established M&E plan not carried out;

1.6 Community mobilization:

Strength	Weakness
❑ Some community mobilization efforts attempted by WASH Cluster & PMO/DMOs; ❑ Neighbors share water sources that are presumed safe;	❑ Hygiene promotion efforts appear low in coverage and intensity; ❑ Multiple methods for awareness raising and community mobilization required; ❑ Supervision & monitoring of activities of community volunteers inadequate; ❑ Multi-tasking & payment of allowances to community mobilizers not adequate;

1.7 Environment: safe water supply:

Strength	Weakness
❑ Bore – hole drilling has been fast; ❑ Some households are practicing boiling water; ❑ Some health facilities are distributing aqua tabs; ❑ Some households are using GIK	❑ Slow processing of purchase orders of chemicals & other materials; ❑ Boiling water may be affected due to power outages and cost of fire wood/ charcoal/ fuel; ❑ Instruction on how to use Aquatab and other chemicals not adequately disseminated; ❑ Data on number of wells super-chlorinated and coverage is lacking;

1.8 Environment: safe food:

Strength	Weakness
❑ Some awareness raising (education) on safe food handling practices;	❑ No inspection of food handling practices; ❑ No targeted hygiene education for food handlers; No consideration of their special need in water supply; ❑ No assessment (and/or action) to monitor market places and commercial food outlets; ❑ Need to review and enact the public health law not considered;

1.9 Environment: sanitation:

Strength	Weakness
❑ Availability of highly professional EHTs at all levels of the health care system; ❑ Good nationwide coverage of WASH cluster members (partners)	❑ Messy sanitation reticulation system; ❑ Lack of adequate resources (human, financial & technical) ❑ Poor sanitation practices (solid waste & excreta disposal) not well addressed; ❑ Insufficient health/hygiene education on improved sanitation practices; ❑ Provision of soap for hand washing may have been ignored;

1.10 Funeral practices

Strength	Weakness
❑ None	❑ No official recommendation with regard to funeral practices made; ❑ No targeted education/ training for funeral organizers ; ❑ Limited community education for cholera cases which may have died at home; ❑ Gap between training and practice in handling corpses in cholera camps;

1.11 Surveillance:

Strength	Weakness
❑ Some attempt to produce complete line lists by MOHCW; ❑ Good start by WHO producing descriptive analysis of the Chitungwiza Outbreak; ❑ Available expertise to carry out proper outbreak investigation; ❑ MOHCW forms, procedures and tools for outbreak investigation and surveillance available;	❑ No stand-by outbreak investigation team; ❑ Poor laboratory confirmation capacity; ❑ Epidemiologic investigation not carried out; ❑ Proper surveillance and reporting systems not established during initial response; ❑ Weekly epidemiological updates are not compiled and disseminated;

1.12 Involvement of international partners:

Strength	Weakness
❑ Intention to act by international partners; ❑ Good communication on alerts, initial responses & materials required; ❑ Willingness to contribute material, personnel and technical support as soon as possible;	❑ Weak leadership in coordinating the cholera response; ❑ Rush to be first on the scene by some organizations; ❑ Poorly coordinated assessment and initiation of response; ❑ Reluctance of humanitarian organizations to share inventory of resources available; ❑ Reluctance of some organizations to share detailed field data after initiating response; ❑ Tendency of NGOs to limit their response to their operational areas; ❑ No joint monitoring & evaluation of response carried out;

2) Assumptions & determination of operational figures:

In order to guide the planning process, certain assumptions had to be made in order to estimate potential evolution of the outbreak.

4.1 Assuming at least 50% of the population is at risk of acquiring cholera (estimated at about 12,000,000 for the purpose of this plan), and taking a conservative estimate of a cholera attack rate of 1%:

Estimated number of cases over one year = 12,000,000 X 50% X 1% = 60,000

4.2 It is known that in most cholera outbreaks, about 10 – 20% of symptomatic cases of cholera develop severe form of the disease which requires vigorous rehydration; therefore, one may estimate about 12,000 cases among the estimated total of 60,000 cases would require admission for intensive treatment;

4.3 Considering the prevalence of risk factors for cholera transmission including lack of safe water supply, poor sanitation conditions and the rainy season among many others, the estimation of an attack rate of 1% may be considered as an underestimation;

4.4 As the consequence of a cholera epidemic is a function of not only the outbreak itself but also of the effectiveness of the control measures put in place, the estimated figure may be lower or higher than the estimated figure.

4.5 In order to facilitate the initiation of response and mobilization of adequate personnel, drugs and material resources, a consensus has been reached to standardize the holding capacity of a CTC, and also, the required personnel, kits and finances to operate a treatment centre and implement community (household) activities aimed at limiting transmission cholera.

4.6 Accordingly, the holding capacity of a cholera treatment centre for the purpose of this plan has been agreed to be 50. The human resource, material and logistical requirements have been estimated based on this operational figure, and is further detailed in the annexes.

4.7 For the estimated case load of 60000, 600 kits (each kit adequate to treat 100 cases) should be stock piled. In each province, six kits will be prepositioned to allow rapid mobilization when required; the rest will be kept as a national stock;

4.8 For each CTC to be established, a cholera kit (for 100) people will be provided to initiate the response; additional materials shall be made available as per the request of the responsible CTC coordinated;

4.9 All humanitarian organizations involved in cholera response are expected to contribute to the Emergency Stock and subscribe to this operational plan to the best degree possible;

3) Plan of action

	Activities/outputs	Collaborating Agencies	Focal agencies by province/district	Remarks
1. Outbreak detection	1.1 Functional early warning system 1.2 Alerts and preliminary assessments in accordance with a specific format 1.3 Inter-Agency Rapid Assessment Team (IARAT); 1.4 Support MOHCW to provide timely information; 1.5 Humanitarian information system (for operational purposes); 1.6 Database of alerts, assessments and feedback;	• MOHCW/WHO • The Health Cluster • Inter-Cluster Cholera Task Force • Health cluster partners • Humanitarian organizations • MOHCW/Health Cluster	TBD	• Through CAP projects • WHO/MOHCW provides format; • National, provincial and district level; • Secretarial, internet and/or fax services support ; • NGO – WHO – OCHA – IICCTF – IASC • WHO (Custodian) with cluster members participation;

	Activities/outputs	Collaborating Agencies	Focal agencies by province/district	Remarks
2. Outbreak confirmation	2.1 Mapping capacity of district / provincial laboratories;	IARAT		• IARAT composition: Doctor, engineer, microbiologist, hygiene promotion expert, epidemiologist
	2.2 Procure 10 sets of portable laboratory kits ;	The Health Cluster		
	2.3 Identify five laboratory technologists to carry out tests;	WHO /MOHCW,/NRL		• On standby for rapid deployment;
	2.4 Support to the central reference laboratory;	MOHCW/WHO/NGOs		• Assessment and gap filling
	2.5 Alternative (external) laboratories for additional tests;	WHO/MOHCW		• In accordance with IHR
	2.6 Financial and logistical support to IARAT	ICCTF & Donors		• Fund-raising

		Activities/outputs	Collaborating Agencies	Focal agencies by province/district	Remarks
3. Organization of the response	3.1	Minimum 'start up kit' to initiate response by IARAT;	IARAT		Refer to annexes : Annex 1 : Start up kit Annex 2 : Standard CTC Annex 3 : Estimated budget by CTC Annex 4 : Roles of the Health & Wash Cluster Annex 5: Procedures Annex 6: Estimating food requirements (MOHCW) Annex 7: WHO/MOHCW contact list
	3.2	Establish national and provincial emergency stocks ;	Health Cluster		
	3.3	Standardized bed capacity, personnel, kits, supplies and logistics for a CTC;	Health Cluster		
	3.4	Emergency reserve fund to facilitate deployment of personnel;	Health Cluster		
	3.5	Dedicated humanitarian agency to support CTC information management; provide daily report;	Health Cluster		
	3.6	Information flow, feedback and dissemination mechanisms;	MOHCW/Health Cluster		
	3.7	Inter-cluster monitoring and evaluation;	Health Cluster		

	Activities/outputs	Collaborating Agencies	Focal agencies by province/district	Remarks
4. Surveillance & information management	4.1 Humanitarian organizations involved in cholera response provide daily statistical and activity updates to WHO;	Health Cluster		
	4.2 WHO provides daily statistical information to OCHA, which provides compiled update to all other humanitarian agencies;	WHO/MOHCW		
	4.3 Weekly health cluster meeting (probably on Fridays) to discuss on situation, response, gaps and action plan;	Health Cluster		
	4.4 Twice weekly inter-cluster task force meeting (Mondays & Thursdays) –update, mobilization of resources and coordinating response;	OCHA/Cluster leads		
	4.5 Weekly epidemiological update by WHO to regional office and OCHA;	WHO		
	4.6 Weekly inventory and report on available medical stocks and supplies (National stock, provincial stock and cholera centres);	Health Cluster		
	4.7 Supporting the MOH to handle medical logistics (now in collaboration with WFP);	WHO		
	4.8 Operational NGOs ensure completeness and send line lists to WHO;	Focal Agencies		
	4.9 WHO hires a data manager for collection, compilation, analysis and dissemination of epidemiological data;	WHO		
	4.10 Verification / comparative analysis of information gathered through the regular MOHCW health information system and humanitarian reports;	WHO / MOHCW		

	Activities/outputs	Collaborating Agencies	Focal agencies by province/district	Remarks
5. Case management	Cholera Treatment Centers:			
	5.1 Make cholera treatment kits available within 24 hours of confirmation of outbreaks and decision to set up a CTC – based on assessment;	Health Cluster		
	5.2 Mobilize required number and type of personnel to run a cholera centre (holding capacity of 50) within 48 hours of decision to set up a CTC;	MOHCW/Health Cluster		
	5.3 Organize treatment centres in compliance with agreed standards and with full consideration to infection control procedures;	Operational agencies/WHO/UNICEF		
	5.4 Train at least 90% of all personnel working in cholera treatment centres within three days of opening centre for service;	WHO/Operational agency/MOHCW		
	5.5 Make treatment protocols and other SOPs available (and visible) in various units of the CTC; 5.6 Enforce the rational use of antibiotics for cholera patients and rigorous patient monitoring;	WHO/Operational agency/MOHCW		
	5.7 Monitor and report daily admissions, cure and deaths in the cholera centre;	MOHCW/WHO		
	Regular Clinics:			
	5.8 Provide material, drugs and technical guidance and supportive supervision to clinics located in the area of the outbreak;	Operational agency		
	5.9 Collect, compile and report daily morbidity, referral and mortality data from the clinics or other secondary cholera treatment units;	Operational agency/MOHCW		
	5.10 Inter-cluster monitoring of all elements of cholera response and reporting weekly to WHO (and the inter-cluster task force on cholera);	Cluster leads		

		Activities/outputs	Collaborating Agencies	Focal agencies by province/district	Remarks
6. Reduction of mortality	6.1	Organize and implement a training campaign to all health personnel in districts affected by the outbreak on prevention, diagnosis, treatment & control of cholera;	MOHCW/WHO and the health cluster		Water, sanitation and hygiene promotion activities, which fall under the WASH cluster functions, are not indicated in this action plan. The WASH cluster is encouraged to develop and share its plan on the prevention and control of transmission of cholera in accordance with activities listed in Annex 4 (distribution of roles among the Health & WASH Clusters).
	6.2	Develop and implement an incentive/ allowance payment schedule applicable in all contexts by all partners;	Health Cluster		
	6.3	In collaboration with district and provincial medical officers, document number, availability and experience of technical personnel for immediate deployment when needed;	MOHCW & Health Cluster		
	6.4	Consolidate community sensitization, mobilization and active case finding using a network of community volunteers;	WASH Cluster		
	6.5	Provide ORS (10 sachets/volunteer/day) for immediate provision to cases identified during doo-to-door visits, and encourage referral to the nearby health facility;	WASH Cluster		
	6.6	Monitor case fatality and address potential risk factors identified;	Health Cluster		

	Activities/outputs	Collaborating Agencies	Focal agencies by province/district	Remarks
7. International partners	7.1 Humanitarian and development agencies will mobilize funds committed to emergency interventions; 7.2 The Inter-Cluster Cholera Task Force establishes a pooled fund to fill gaps for operational support; 7.3 Humanitarian organizations make an inventory of available human resource & logistic capacity that may be mobilized for emergency response; 7.4 Humanitarian and development organizations working in the health sector commit to participate in assessment, investigation of outbreaks, initiating response, monitoring and evaluation anywhere in the country;	All agencies Cluster Leads All agencies All agencies		Humanitarian agencies are expected to notify the health cluster lead and the IASC of their capacity & geographical coverage in order to enable mapping of capacities and appointment of provincial and district focal points on behalf of the health cluster.

Annex 1: Drugs, supplies and materials to required to initiate a response

(Based on the eestimated minimum supplies needed to treat 100 patients during a cholera outbreak by WHO, 1994)

Rehydration supplies
650 packets ORS (for 1 litre each)
120 bags Ringer's lactate solution**2**, 1 litre, with giving sets
10 scalp-vein sets
3 nasogastric tubes, 5.3 mm OD, 3.5 ID, (16 French), 50 cm long for adults
3 nasogastric tubes, 2.7 mm OD, 1.5 ID, (8 French), 38 cm long for children

Antibiotics
For adults:
200 tablets of Ciprofloxacin, 500 mg (1 tablet twice daily for five days per severely dehydrated case)

For Pregnant women and children under 12 years:
400 tablets Erythromycin, 500 mg (1 tablet four times daily for five days for adults) and children @ 6.25-12.5mg/kg

Other treatment supplies
2 large water dispensers with tap (marked at 5- and 10-litre levels) for making ORS solution in bulk
20 bottles (1 litre) for ORS solution (e.g. empty IV bottles)
20 bottles (0.5 litres) for ORS solution
40 tumblers, 200 ml
20 teaspoons
5 kg cotton wool
2 reels adhesive tape

1*The amount of supplies listed allows enough intravenous fluid followed by ORS for 20 severely dehydrated patients, and the exclusive use of ORS for the other 80 patients.*
2*If Ringer's lactate solution is not available, substitute normal saline.*

Annex 2: Operational standard for a CTC including personnel and vehicles (Capacity = 50 patients)

Cholera Treatment Centre	Community interventions	Transport & logistics
1) CTC Coordinator = 1 2) Doctors = 2 (01 per 12 hour shift) 3) Nurses = 30 (10 per 8 hour shift) 4) Support staff (at a ratio of 1 to 3 nurses) = 10 5) Record keeping = 3 (one per 8 hour shift) 6) Environmental Health Technicians = 3 (one per 12 hour shift) 7) Laboratory scientist = 2 8) Logisticians = 2 9) Data entry personnel = 2 10) Miscellaneous support staff = 12 (3 per 8 hour shift) **Total: 67**	1) Environmental health technicians = 2 2) Active Case Finding Team = 10 3) Disinfection team = 5 4) Hygiene Promoters = 10 (1hygiene promoter per 50 House Holds) (Note: The number can be increased depending of the area and size of community to be reached) **Total: 27**	1) Vehicles (2) 4X4 Pick Up 2) Motor Cycle (2) 3) Fuel as per estimated travel distance and consumption (Start up volume = 500 liters) 4) For food supplies - see annex 7

Annex 3: Estimated budget for personnel costs per cholera treatment center (including community interventions)

	Number	Daily rate (USD)	No. of days	Total
Personnel for a cholera treatment centre				
1) CTC Coordinator	1	15	30	450
2) Doctors =	2	15	30	900
3) Nurses = 30	30	10	30	9000
4) Support staff	10	5	30	1500
5) Record keeping	3	5	30	450
6) Environmental Health Technicians	3	10	30	900
7) Laboratory scientist	2	10	30	600
8) Logisticians	2	5	30	300
9) Data entry personnel	2	5	30	300
10) Miscellaneous support staff	12	5	30	1800
Sub-total				16200
Personnel for community interventions				
1) Environmental health technicians	2	10	30	600
2) Active case finding team	10	5	30	1500
3) Disinfection team	5	5	30	750
4) Hygiene promoters	10	5	30	1500
Sub-total				4350
Total personnel costs				20550
Contingency (10%)				2055
GRAND TOTAL				**22605**

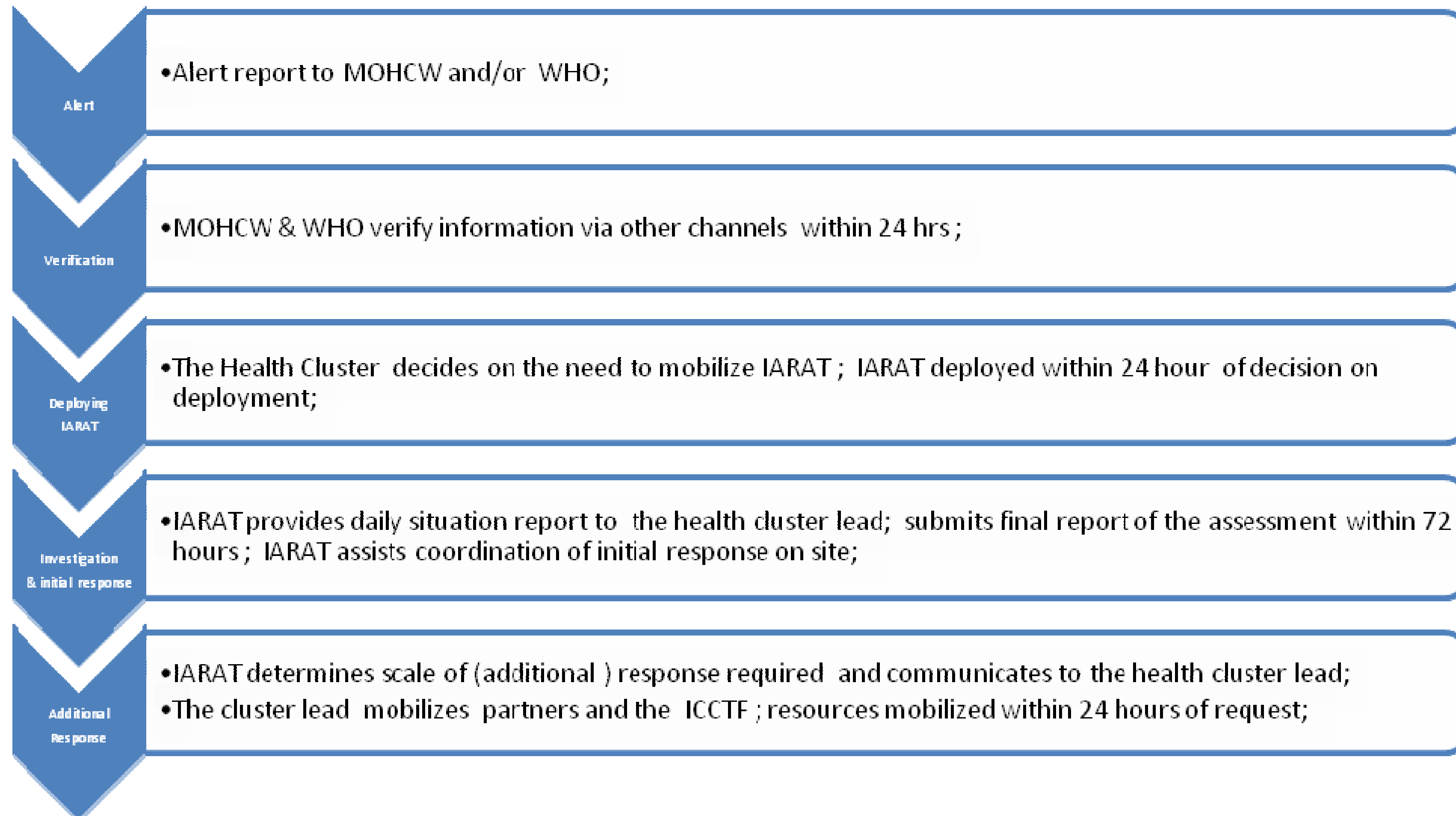
Please note that the estimate is for one cholera center of 50 holding capacity.

Annex 4: Role of the Health & WASH Clusters (based on WHO/MOHCW Poster on Key elements of cholera control):

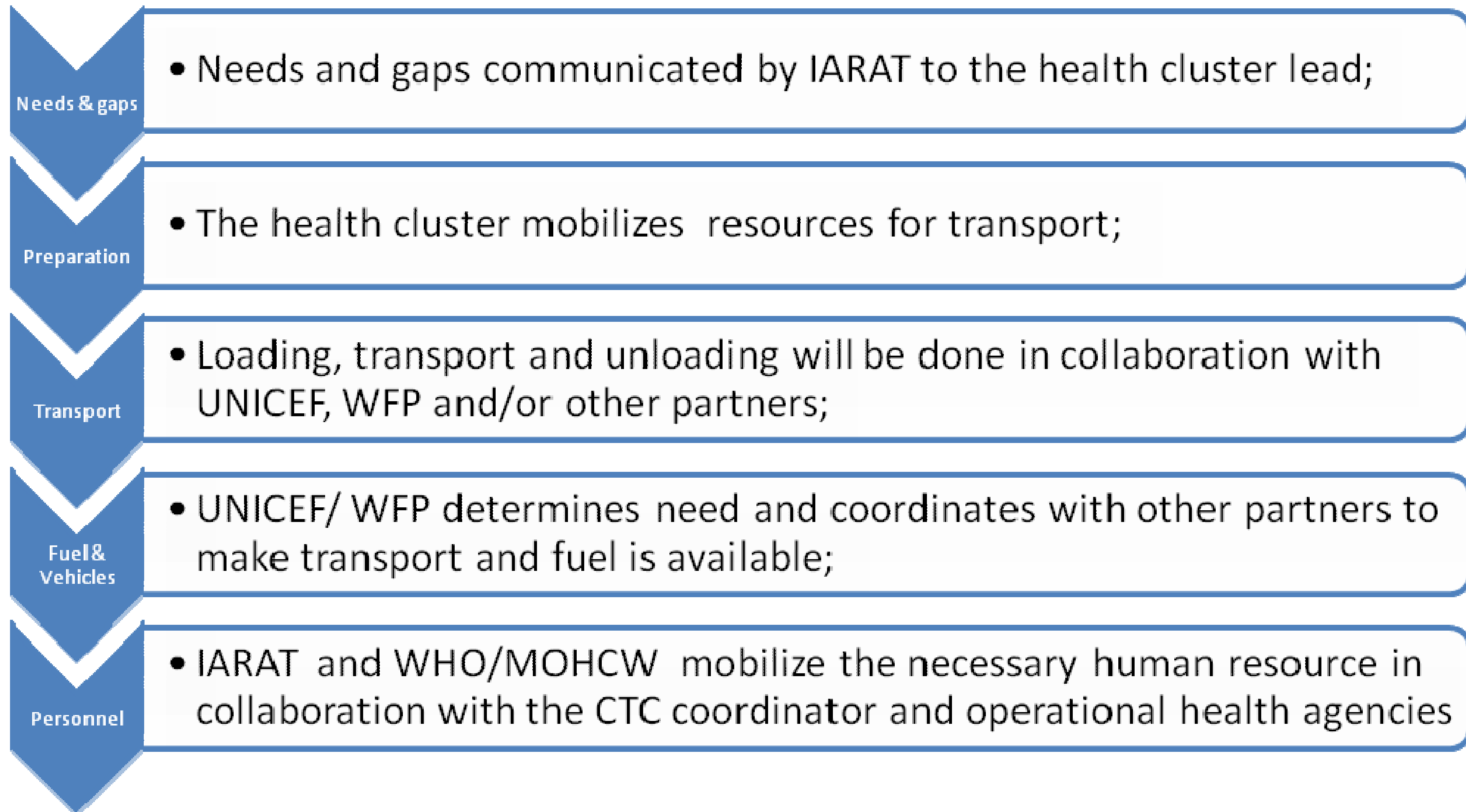
Health Cluster	Wash Cluster
1. Surveillance Activate Rapid Response Teams and inform partners Early detection and report in 24 hours Line listing of cases, construct epicurve, spot maps; calculate CFR, attack rate, and tabulate by age, sex and place Investigate cases and identify sources of infection, risk factors, contact tracing and follow up of cases Community based surveillance Supervise burials Produce outbreak report Fill in the log of outbreaks	**4. Food, water and sanitation** Safe water supply Construction and/or proper use of toilets Water quality monitoring Food inspection and handling practices Water chlorination & decontamination of toilets
2. Laboratory Specimen collection, packaging, storage and transportation Confirm the start of cholera outbreak on 5-10 cases Send specimens for quality control (NMRL) and further characterization Perform drug sensitivity pattern Confirm end of cholera outbreak	**5. Hygiene promotion** Rapid assessment to establish predisposing factors, risk behaviour & gaps Develop messages based on findings Mobilize other stakeholders for hygiene promotion Conduct hygiene education in both non-affected and affected areas simultaneously
3. Case Management Establish treatment camps Accurate history taking and documentation Use a working case definition Rehydrate and treat patients as per protocol Practice strict infection control Conduct daily meetings Collect stool samples	

Annex 5: Coordination of outbreak investigation, response, monitoring and evaluation

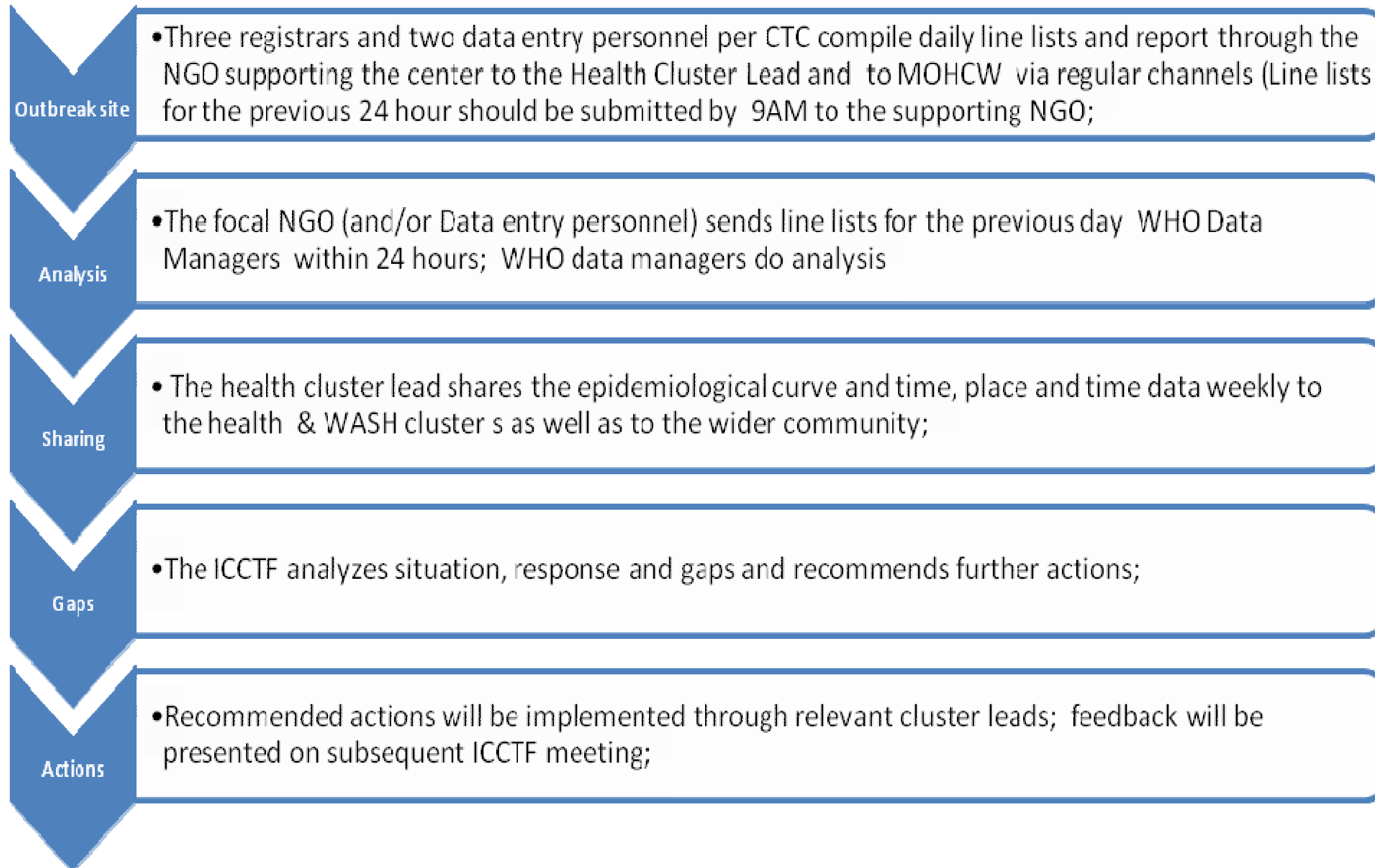
1) Alerts, assessment, initial response and outbreak investigation



2) Organization of the response



3) Surveillance and information management



Annex 6: Estimated food requirements (MOHCW, 27/11/2008)

ITEM	Quantity per number of people per week												
ITEM	1	10	20	25	50	75	100	150	200	250	500	750	1000
Mealie-meal/kg	2.5	25	50	62.5	125	187.5	250	375	500	625	1250	1875	2500
Rice/kg	0.25	2.5	5	6.25	12.5	18.75	25	37.5	50	62.5	125	187.5	250
Maccaroni/Spaghetti/kg	0.013	0.13	0.25	0.31	0.63	0.94	1.25	1.88	2.50	3.13	6.25	9.38	12.50
Potatoes/kg	0.375	3.75	7.5	9.375	18.75	28.125	37.5	56.25	75	93.75	187.5	281.25	375
Beef/kg	1.35	13.5	27	33.75	67.5	101.25	135	202.5	270	337.5	675	1012.5	1350
Chicken/kg	0.3	3	6	7.5	15	22.5	30	45	60	75	150	225	300
Kapenta/kg	0.025	0.25	0.5	0.625	1.25	1.875	2.5	3.75	5	6.25	12.5	18.75	25
Sugar Beans/kg	0.1	1	2	2.5	5	7.5	10	15	20	25	50	75	100
Eggs/each	3	30	60	75	150	225	300	450	600	750	1500	2250	3000
Peanut Butter/l	0.13	1.31	2.63	3.28	6.56	9.84	13.13	19.69	26.25	32.81	65.63	98.44	131.25
Sugar/kg	0.5	5	10	12.5	25	37.5	50	75	100	125	250	375	500
Margarine/kg	0.035	0.35	0.7	0.875	1.75	2.625	3.5	5.25	7	8.75	17.5	26.25	35
Tea Leaves/kg	0.04	0.4	0.8	1	2	3	4	6	8	10	20	30	40
Bread /loaf	1	7	14	18	36	54	72	108	144	180	360	540	720
Plain Flour /kg	0.1	1	2	2.5	5	7.5	10	15	20	25	50	75	100
Cooking Oil/litres	0.125	1.25	2.5	3.125	6.25	9.375	12.5	18.75	25	31.25	62.5	93.75	125
Fine Salt/kg	0.025	0.25	0.5	0.625	1.25	1.875	2.5	3.75	5	6.25	12.5	18.75	25
Tomato Paste/Puree/kg	0.041	0.41	0.82	1.025	2.05	3.075	4.1	6.15	8.2	10.25	20.5	30.75	41
Drink (Syrups) Litres	0.4	4	8	10	20	30	40	60	80	100	200	300	400
Fruits in season/kg	0.36	3.6	7.2	9	18	27	36	54	72	90	180	270	360
Butternut/Pumpkin/Gem Squash/Carrots/kg	0.3	3	6	7.5	15	22.5	30	45	60	75	150	225	300
Cabbages/Rape/Spinach/Covokg	1	10	20	25	50	75	100	150	200	250	500	750	1000
Tomatoes/kg	0.15	1.5	3	3.75	7.5	11.25	15	22.5	30	37.5	75	112.5	150

Onion/**kg**	0.15	1.5	3	3.75	7.5	11.25	15	22.5	30	37.5	75	112.5	150
Lacto/**litre**	0.25	2.5	5	6.25	12.5	18.75	25	37.5	50	62.5	125	187.5	250
Powdered Milk/**kg**	0.1	1	2	2.5	5	7.5	10	15	20	25	50	75	100
Coarse Salt/**kg**	0.025	0.25	0.5	0.625	1.25	1.875	2.5	3.75	5	6.25	12.5	18.75	25
Yeast/**g**	0.5	5	10	12.5	25	37.5	50	75	100	125	250	375	500
Soya Mince**kg**	0.025	0.25	0.5	0.625	1.25	1.875	2.5	3.75	5	6.25	12.5	18.75	25

Requirements for special diets and feeds

ITEM													
Rice/**kg**	0.25	2.5	5	6.25	12.5	18.75	25	37.5	50	62.5	125	187.5	250
Maccaroni/Spaghetti/**kg**	0.013	0.13	0.25	0.31	0.63	0.94	1.25	1.88	2.50	3.13	6.25	9.38	12.50
Potatoes/**kg**	0.375	3.75	7.5	9.375	18.75	28.125	37.5	56.25	75	93.75	187.5	281.25	375
Fresh Milk/**litres**	0.7	7	14	17.5	35	52.5	70	105	140	175	350	525	700
Lactogen 1/**g**	4	40	80	100	200	300	400	600	800	1000	2000	3000	4000
Lactogen 2/**g**	4	40	80	100	200	300	400	600	800	1000	2000	3000	4000

Annex 7: WHO/MOHCW Cholera Response Group – Contact list

1. Alerts, assessment and response (medical logistics):

1.1 Mr Alex Chimbaru , chimbarua@zw.afro.who.int, 0912241591

1.2 Mr Stephen Maphosa, maphosas@zw,afro.who.int, 0912279259

2. Case management and surveillance:

2.1 Dr Lincoln Charimari, charimaril@zw.afro.who.int, 011406427

2.2 Dr Thomas Aisu, aisut@zw.afro.who.int , 0912490712

2.3 Dr Stanley Midzi, Deputy Director of Epidemiology & Disease Control, MoHCW

3. Data and information management:

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Appendix: Cost estimate for full implementation of the operational plan:

1. Surveillance, information management and coordination	3,800,000 USD
2. Equipment and supplies to strengthen outbreak investigation, monitoring and evaluation capacity	348,000 USD
3. Stockpiling and responding to cholera and other health emergencies	11,234,000 USD
4. Water, sanitation, hygiene and infection control in health facilities	3,987,500 USD
Total	19, 369, 500 USD*

Note:

In the cost estimate that was shared with the IASC and Donors, a total of 20, 869, 5000 was indicated, including 1,500,000 for the purchase of Aluminium Sulphate; the amount for Aluminium Sulphate is excluded here as the intervention falls under the remits of the WASH Cluster.