



Cholera in Zimbabwe: Epidemiological Bulletin Number 9 Week 6 (01-07 Feb 2009)

Foreword

This is the 9th epidemiological bulletin to be issued since the onset of a countrywide Zimbabwe cholera epidemic first reported in August, 2008. Bulletins are to be published weekly to coincide with the end of an epidemiological week (Sunday to Saturday). Daily cumulative caseload updates are posted on the OCHA website <http://ochaonline.un.org/Default.aspx?alias=ochaonline.un.org/zimbabwe>

The bulletin provides a weekly overview of the epidemic in Zimbabwe, including province by province data, to inform and improve the continuing public health response. It also provides guidance to agencies on issues relating to data collection, analysis and interpretation, and suggests operational strategies on the basis of epidemiological patterns so far.

The WHO Team welcomes feedback and data provided by individual agencies. Given the scope of this epidemic, errors and omissions are inevitable: we will be grateful for any information that helps to rectify these.

Please send any comments and feedback to the Cholera Control and Command Centre
Email: Cholera_Taskforce@zw.afro.who.int.

Toll free number for alert by district and province is **08089001** or **08089002** or **08089000**
Mobile number for alerts is **0912 104 257**

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1. Outbreak summary

Data of week 05 were revised. Further data up dating in on-going.

Since Aug 2008, some 56 districts (on 62) have experienced cases at one point in time. The total number of cases reported since the start reached 68,305 cases and 3,385 deaths.

From 01-07 Feb 09, a total of 7,081 suspected cholera cases were reported to the World Health Organization (WHO) through the Ministry of Health and Child Welfare's (MoHCW) surveillance department. This weekly count represents an average of 1,012 new suspected cases reported per day and a 15%.decrease as compared to the prior week.

A total of 219 deaths were also reported (average 31/day) representing a sharp decrease of 35% in the weekly deaths count..

The weekly case-fatality ratio (CFR)¹, based on reported deaths and cases continues to decrease from 4.0% last week to 3.1% this week whereas the institutional CFR experienced a small increase from 1.4 to 1.7%. However, the proportion of community deaths among all deaths dropped from 66% to 44% this week, possibly in relation with better attendance/access to cholera treatment centre (CTC) and units (CTU).

A total of 360 Cholera Treatment Centers (CTC) and Cholera Treatments Unit (CTU) have been reported to have been established at one point in time, of which 306 are believed to be active as of 07 Feb 2009.

In conclusion, the epidemic is still not under control. Under reporting this week challenges interpretation of trends, despite an appearing decrease in caseload during week 06. Decrease of the crude case fatality ratio and of the proportion of community deaths suggest a continuing improvement in case attendance to health facilities as a result of social mobilization activities and decentralization of care close to the affected community.

¹ the proportion of cases that die of the disease during the time period (here the week)

2. National Overview

2.1. Cases and deaths

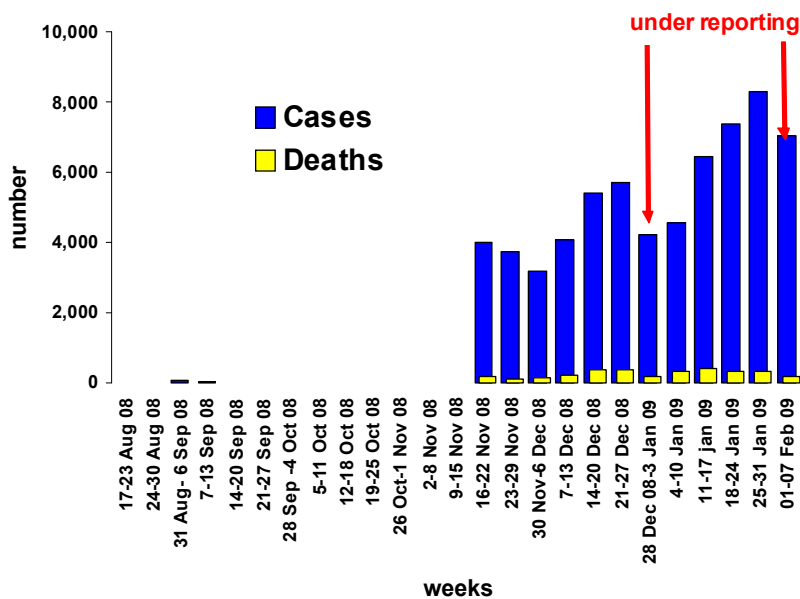
Suspected cholera cases continue to be reported from all 10 provinces. A total of 59 areas within 56² districts were affected so far (90% of 62 districts affected). Outbreaks are localized by province.

From 01-07 Feb 09 (week 6)

- 7,081 new suspected cholera were reported representing a 15% decrease compared to week 5 (total case week 5 of 8,341 after adjustment). Figure 1
- 219 new deaths were reported representing a 35% decrease (335 deaths week 5 after adjustment).
- The most affected provinces in terms of weekly caseload are Manicaland (1,715), Midlands (1,343), Mashonaland West (1,317) and Masvingo (1,135).
- The overall number of cases reported from Harare Province was globally stable this week (figure 2)

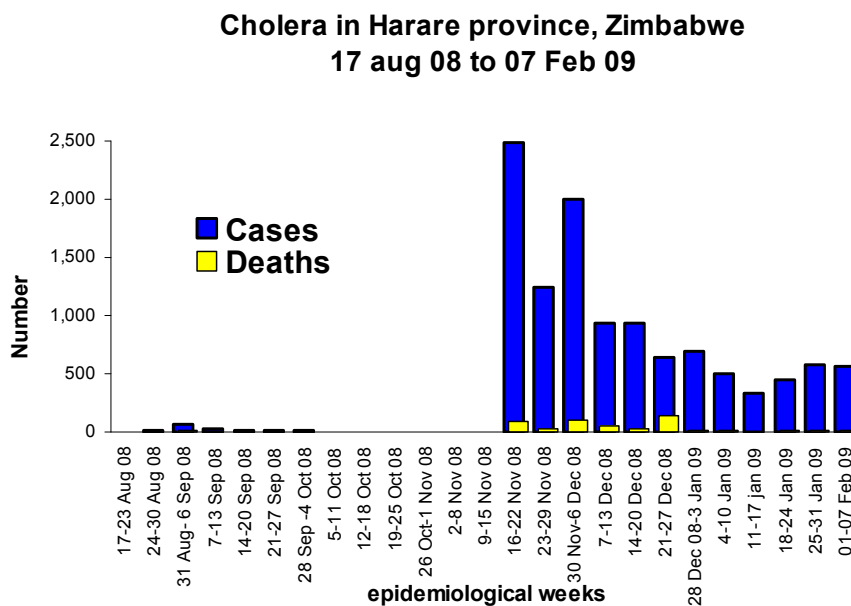
Figure 1

Cholera in Zimbabwe from 17 Aug08 to 07Feb09



² Amendment of Bulletin 8: It should have read :58 affected areas in 56districts

Figure 2



* Gaps in data reporting week 50 (7-13 Dec 08)

** Probable under reporting week 1 (28Dec08- 3Jan 09, holiday period)

Several drawback for data analysis were observed this week

- Manicaland has seen the sharpest increase in caseload this week but aggregation of data is suspected to have occurred in the 2 most affected districts of the province.
- Data from Mashonaland Central province (increasing trend week 5) are pending completion for week 6 (missing report for 3/7 districts).
- Data from Mashonaland East are thought to reflect under reporting (4/9 districts failed to report)

2.2. Mortality

2.2.1. Differential deaths count

Community deaths are defined here as deaths suspected from cholera which occur outside of health facilities. The number of community deaths can reflect how well the population is being covered by the CTC/CTUs. However, interpretation of this figure must be made with caution since verbal autopsies are rarely done to confirm cause of death: some community deaths may not be caused by cholera. Reports of community deaths are not available from all provinces.

In most provinces, the proportion of cases in the community exceeded the proportion of deaths in the treatments centres. Still a decrease of community deaths from 66% week 5 (229/335) to 44% (97/219) week 06 was observed. This could point to increasing attendance to CTC/CTU. However, this proportion should be reviewed at the light of expected up-dates of week 6 data.

Table 1. Proportion of deaths outside cholera treatment centers, week 01-07 Feb 09, selected* provinces

Province	Number of deaths	Number of community deaths	Proportion of community death (%)
Harare city*	13	3	23
Chitungwiza	3	0	0
Bulawayo	1	0	0
Mashonaland Central	16	11	69
Mashonaland East	5	4	80
Mashonaland West	41	15	37
Manicaland	60	28	47
Masvingo	40	20	50
Matebeleland North	7	7	100
Matebeleland South	2	1	50
Midlands	31	8	26
Total	219	97	44

*for Harare, deaths outside CTC are irregularly/not reported

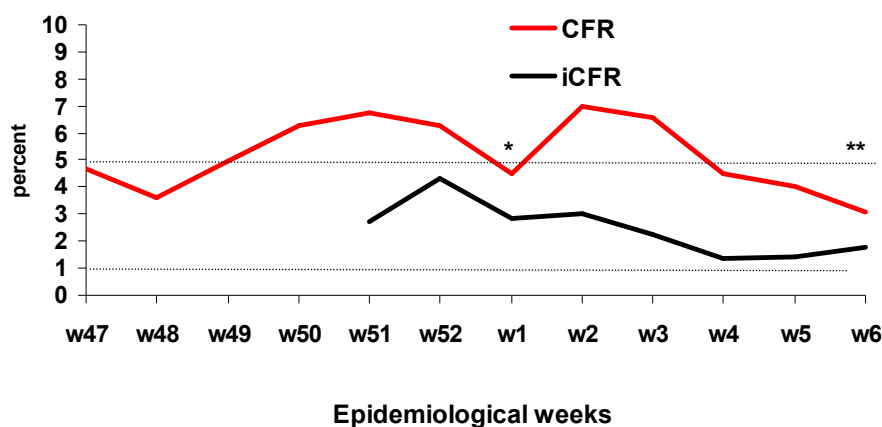
2.2.2. Case fatality ratios (CFR)

Week 6, the institutional CFR³ (iCFR) increased from 1.4% week 5 to 1.7%.

The crude case fatality ratio (CFR) was of 3.1%, representing a decreasing trend as compared to week 5 (4.0 %). This decrease is also to be considered with caution given the level of reporting for week 6.

Figure 3

**Cholera in Zimbabwe from 16 nov 08 to 07 Feb 09
Weekly crude and institutional case-fatality ratios**



* Probable under reporting of cases and death during week 1 (28 Dec08-3Jan 09) during the holiday period

** under reporting week 6

³ iCFR: the institutional CFR is estimated based on the assumption that deaths which are not reported as being community deaths were institution level. This proxy is meant to enable monitoring of the impacts of case-management efforts at institutional level.

Table 2. weekly number of reported suspected cholera cases, deaths and Case Fatality Ratios from 16Nov/08 - 07Feb09 (week 47, 2008 to week 06, 2009)*

N°	Weeks Start - end date	Cases Total	Death		CFRs (%)		Daily average	
			Total	Community	Crude	institutional	Cases	Deaths
47	16-22 Nov 08	3,987	186	0	4.7		570	27
48	23-29 Nov 08	3,743	136	0	3.6		535	19
49	30 Nov 6 Dec 08	3,199	159	0	5.0		457	23
50	7-13 Dec 08	4,100	257	250	6.3		586	37
51	14-20 Dec 08	5,420	367	227	6.8	2.7	774	52
52	21-27 Dec 08	5,730	359	117	6.3	4.3	819	51
1	28 Dec 08-3 Jan 09	4,255	192	74	4.5	2.8	608	27
2	4-10 Jan 09	4,586	321	188	7.0	3.0	655	46
3	11-17 Jan 09	6,466	424	286	6.6	2.2	924	61
4	18-24 Jan 09	7,378	332	233	4.5	1.4	1,054	47
5	25-31 Jan 09**	8,341	335	220	4.0	1.4	1,192	48
6	01-07 Feb 09	7,081	219	97	3.1	1.7	1,012	31

*1001 additional cases community cases were reported from Chitungwiza and 178 community deaths from Harare – these are back-reports of cases that did not occur in the previous week. These cases are included in the cumulative cases but not in the weekly cases. Case count was also adjusted

** 312 cases have been reclassified from week 5 to week 4

This week, 11 districts still had a crude CFR>5% against 15 the prior week

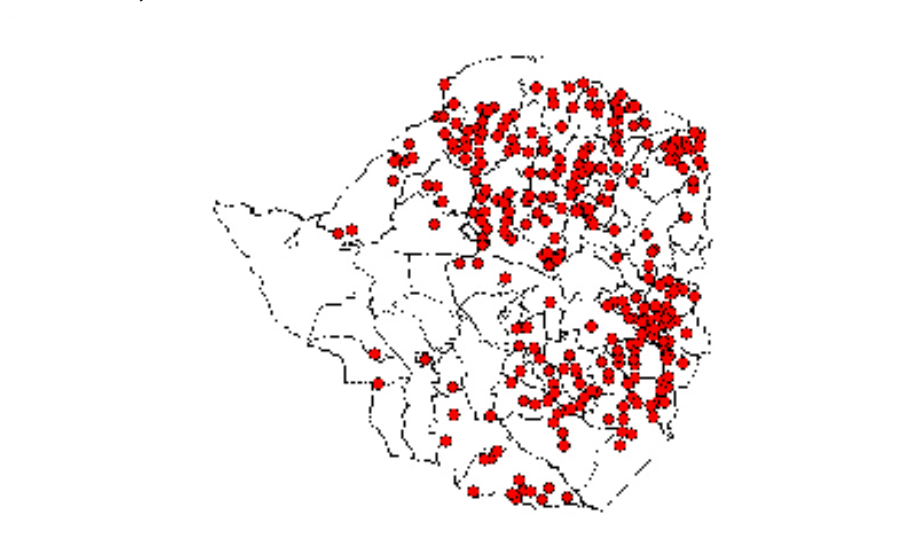
2.3. Cholera treatment centres (CTC and CTU)

To respond to the outbreak, a total of 360 Cholera Treatment Centres (CTC/CTU) have at one point been set up around the country, including 306 structures thought to be operating as of 07 Feb 09 (table 3, fig.3).

Table 3. Number of CTC/CTU reported to be active per province, as of 07 Feb 2009

Province	Total 2008 population	N° of Cases	N° of CTC	Average N° of new admission per CTC	
				During week 6	by day of w6
Bulawayo	718,278	13	1	13	2
Manicaland	1,665,451	1,715	60	29	4
Mashonaland Central	1,056,666	658	42	16	2
Mashonaland East	1,196,772	191	26	7	1
Mashonaland West	1,300,012	1,317	74	18	3
Masvingo	1,401,672	1,135	59	19	3
Matabeleland North	693,230	44	5	9	1
Matabeleland South	748,317	94	6	16	2
Midlands	1,554,058	1,343	33	41	6
Total	12,347,238	7,081	306	23	3

Figure 4. Location of all the cholera treatment centers (CTC and CTU) in Zimbabwe which have been operating at one point in time, as of 07 Feb 2009



2.4. Surveillance findings by province

2.4.1. Attack rates

From 01-07 Feb 09 the **most affected provinces** in terms of attack rates were in cases per 100,000 inhabitants : Mashonaland West (AR:108), Manicaland (AR:103) and Midlands (92). (table 4).

Table 4. weekly attack rate (AR) per 100,000 inhabitants by provinces*, Zimbabwe 01-07 Feb 09

Provinces	Population	Number of cases	AR per 100,000
Harare**	*1,891,700	565	30
Bulawayo	718,278	13	2
Manicaland	1,665,450	1715	103
Mash Central	1,056,665	664	63
Mash East	1,196,772	191	16
Mash West	*1,214,928	1,317	108
Masvingo	1,401,672	1,135	81
Mat North	351,260	44	13
Mat South	331,096	94	28
Midlands	*1,464,537	1,343	92
TOTAL	*11,292,358	7,081	63

* Cumulating population of affected district only

**Includes Harare city and Chitungwiza

At district level, the highest weekly attack rate (AR) were observed in Gokwe North (Midlands), Chiredzi (Masvingo), and Chipinge and Buhera in Manicaland province (table 5).

Table 5: Cases and death and weekly incidence rates of district with highest incidence during week 6

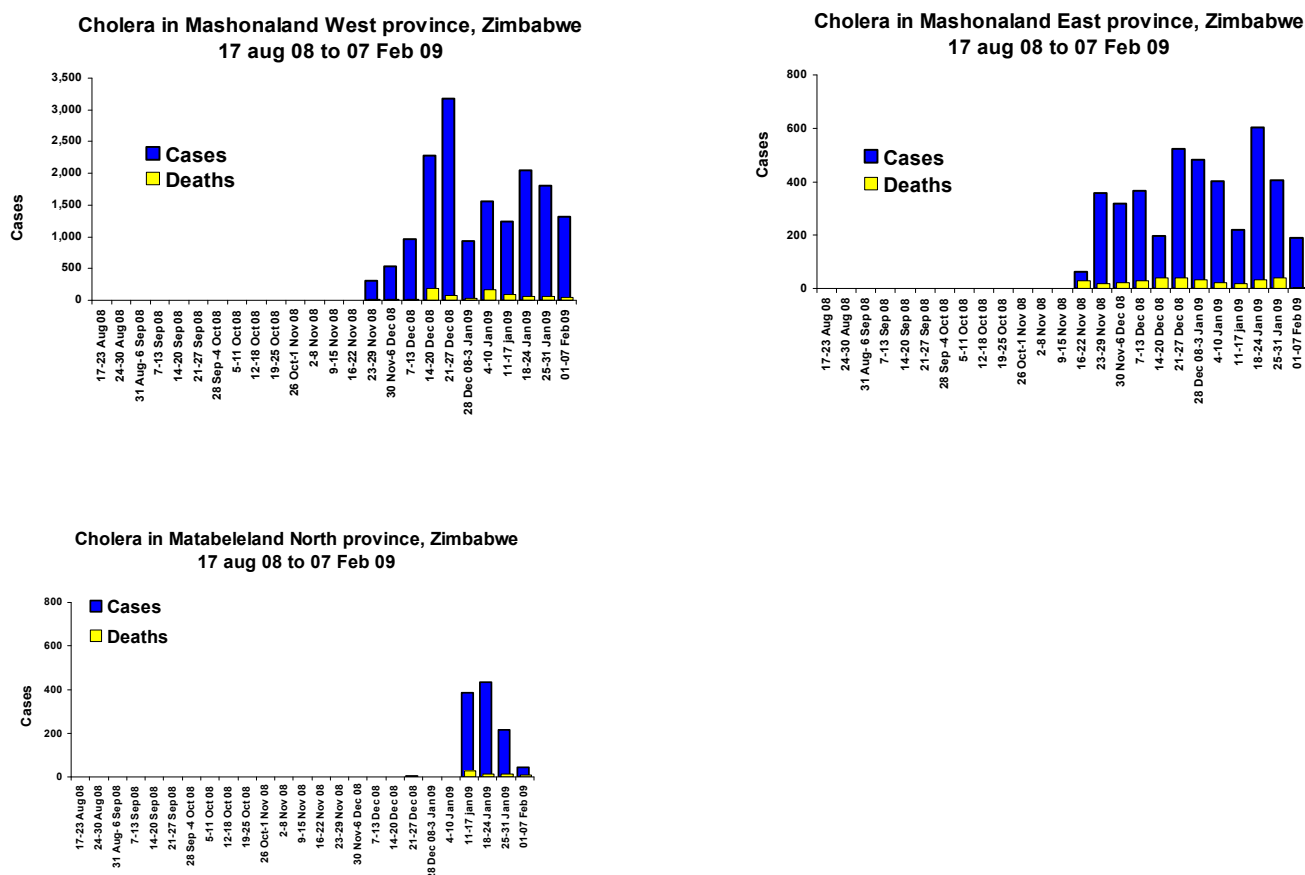
Province	District	population	cases	death	Weekly AR per 100,000
Midlands	Gokwe North	227,546	719	14	316
Masvingo	Chiredzi	248,417	761	24	306
Mashonaland West	Kadoma	250,766	481	10	192
	Hurungwe	303,911	327	3	108
Manicaland	Chipinge	301,251	828	6	275
	Buhera	233,598	462	12	198
Mashonaland Central	Mt Darwin	212,291	368	6	173
	Bindura	150,981	234	3	155
Mashonaland East	UMP	110,755	117	3	106

2.4.2. Epidemic dynamic

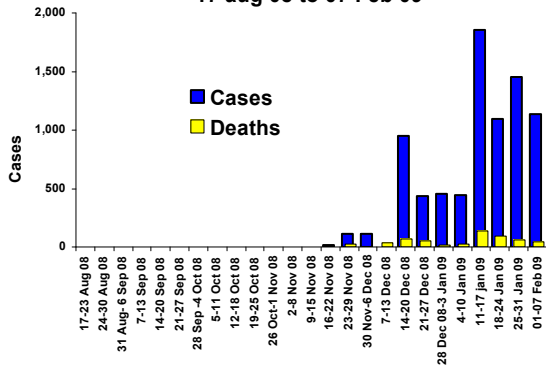
The trend in case report for the week was to decrease in Mashonaland West, East, Central, Matabeleland North, Bulawayo, Masvingo and Harare city and to the increase in Manicaland, Midlands and Chitungwiza. Low case loads were observed in Matabeleland South and Bulawayo.

Figure 5. Weekly case and death count by province (note differences in scales)

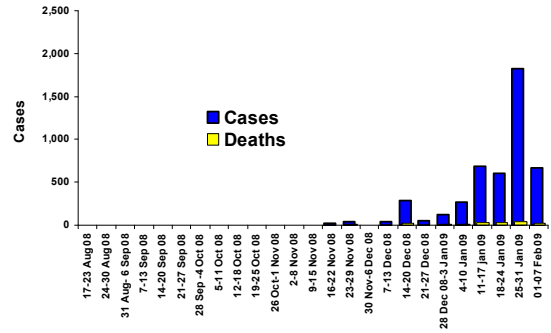
Provinces with decreasing trends or persisting low caseload



Cholera in Masvingo province, Zimbabwe
17 aug 08 to 07 Feb 09



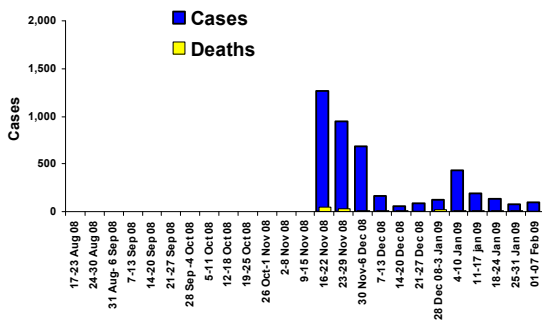
Cholera in Mashonaland Central province, Zimbabwe
17 aug 08 to 07 Feb 09



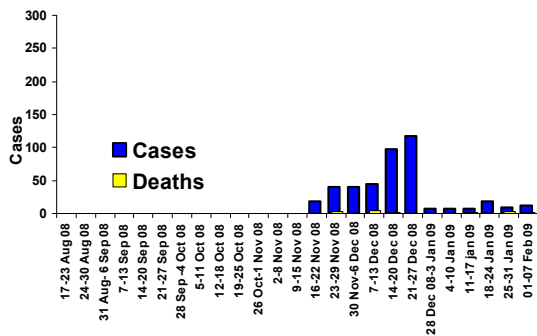
Note for week 06 :

- Mashonaland East: No report from 4/9 districts
- Mashonaland Central province: No report from 3 out of 7 districts.

Cholera in Matabeleland South province, Zimbabwe
17 aug 08 to 07 Feb 09

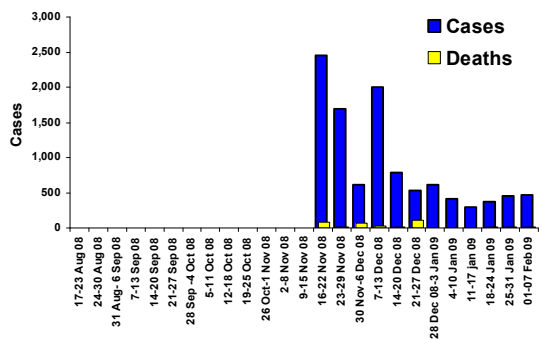


Cholera in Bulawayo province, Zimbabwe
17 aug 08 to 07 Feb 09

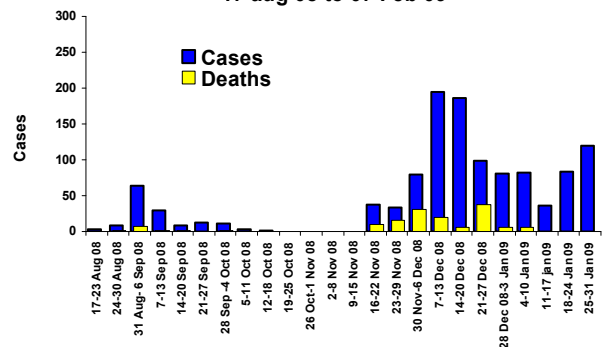


Harare province (stable trend globally)

Cholera in Harare City, Zimbabwe
17 aug 08 to 07 Feb 09

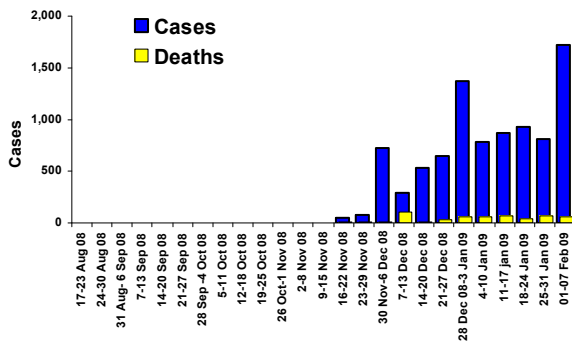


Cholera in Chitungwiza, Zimbabwe
17 aug 08 to 07 Feb 09

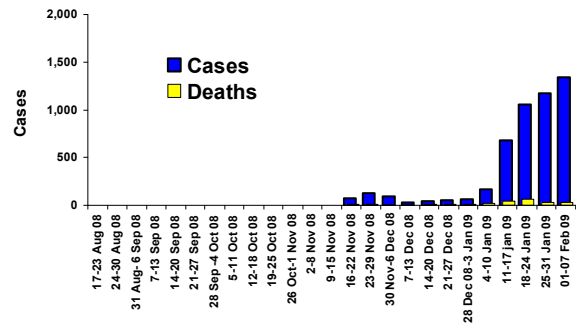


Other provinces with increasing trend

**Cholera in Manicaland province, Zimbabwe
17 aug 08 to 07 Feb 09**



**Cholera in Midlands province, Zimbabwe
17 aug 08 to 07 Feb 09**



- Manicaland: Possible aggregation of data on the 2 mostly affected district (Chipinge and Buhera)

Table 5. Trends in cases and deaths by province, with comments on affected districts (based on appendix 2 - see note for readers)

Province	Cases		Deaths		Higher caseload this week	Comments
	This week	Last week	This week	Last week		
Bulawayo	13	10	1	3		
Harare (City)	461	453	13	13		A total of 178 community deaths were added but were back reports of deaths that occurred in previous weeks. These deaths are not included in the weekly data but are included in the cumulative numbers. Continuous increase in caseload this week
Harare (Chitungwiza)	104	119	3	0		Decrease in caseload
Mashonaland Central	664	1,825	16	44		
Mashonaland West	1,317	1,805	41	61	Kadoma, Hurungwe Zvimba	Decreasing caseload: Makonde, Kadoma, Hurungwe, Chegutu, Kariba rural Increasing caseload: Zvimba (doubling) Kariba urban,
Manicaland	1,715	815	60	65		
Matabeleland North	44	213	7	10	Binga Nkayi	Binga: Continuation of decrease of caseload Nkayi starting to report cases Lupane reporting zero cases
Matabeleland South	94	73	2	5	Beitbridge	Sharp decrease in caseload in Beitbridge
Masvingo	1,135	1,452	40	62	Masvingo Cheredzi, Chivi,	Masvingo: Sharp increase in caseload. Cheredzi: Continuous increase in case load. Decrease in Zaka (sharp) and in Mwenezi. No reporting from Bikita
Midlands	1,343	1,172	31	31	Gokwe South and North Mberengwa	Sharp increase in caseload in Gokwe North and Mberengwa; continuous decreasing in Gokwe South
Mashonaland East	191	404	5	41	Goromonzi, UMP	Significant under reporting this week. Sharp increase in Goromonzi and UMP Decrease in Chikomba and Seke

↑ **Increasing** ↓ **Decreasing** — **Stable**

3. Discussion

3.1. Cholera Command and Control Center Response

- An assessment visit was carried out to Mont Darwin (Mashonaland Central) by the C4 during week 05; follow up support visits are needed to respond to the sharp increase in caseload (logistic, drugs, CTC design, social mobilisation)
- Data set cleaning and data analysis of the line listings received by the C4 is being carried out
- A process for data revision and validation is on-going.

3.2. Alerts and early warning system

Some criteria are being used by MOHCW and partners to target high priority districts for investigation:

- Daily reported cases > 30 or
- Daily CFR > 5%
- Daily number of deaths outside health facility/CTC/CTU of more than 3
- Districts with cases re-occurring after more than 14 days

Some criteria were also developed to prioritize C4 field support visits.

3.3. Interpretation

There is still place for improvement of data transmission and analysis, and there are still aggregated back reports coming in challenging data and trend interpretation.

From 01-07 Feb 09, a start of decline in caseload was observed. Unfortunately, the level of under reporting does not allow drawing conclusion on the course of the outbreak at this point.

The situation in Harare still needs to be closely monitored and data reviewed, in order to assess if the increase in caseload is due to revision of case counting procedures or to new patients influx from same or new affected areas.

The overall number of deaths reported this week was decreasing of one third. Here also the trend can not be confirmed at this point. The proportion of deaths at community level versus institutional level is continuing to be down sized, possibly pointing out to better home case management and/or earlier and larger attendance to CTC/CTU. However, this proportion varies much depending on the affected province, and effort are still needed to up grade community awareness. Finally, if the institutional CFR raise a little this week, it remains below 2% suggesting that case management has improved since the start.

All these National figures are global and variations are observed across the country. The same indicators also need to be carefully analysed by actors at district and provincial level in order to adapt / re-adapt their response and prevention strategies. The mixed picture of increasing cases, decreasing deaths with rural and semi-urban areas affected points to the importance of a sustained effort of prevention and case-management for the different local epidemic situations.

4. Acknowledgements

We are very grateful to MoHCW District Medical Officer, Provincial surveillance officers, especially Provincial Medical Director and Environmental Health Officer, and MoHCW's department of surveillance, who have helped to gather and transmit the bulk of the information presented here.

Likewise, we acknowledge agencies, including members of the Health and WaSH clusters, who have kindly shared their data with our team.

MoHCW has recognized and thanked the efforts made by NGOs assisting in the response and providing support to MoHCW to the cholera treatment centres (MoHCW – 16/12/2008).

This document would not have been possible without the contributions of the WHO data management team, who are part of the C4 Cholera Command and Control Center.

5. Appendix 1: Case definition

The cholera control guidelines for Zimbabwe state that the definition of suspected cholera cases is "in an area where there is a cholera epidemic, a patient aged 2 years or more develops acute watery diarrhoea, with or without vomiting". A confirmed cholera case is "when *Vibrio cholerae* is isolated from any patient with diarrhoea". This is adapted/modelled after the WHO case definition for cholera.

Including all ages in the case definition somewhat reduces specificity (i.e. more non-cholera childhood diarrhoea cases are included), but essentially does not impede meaningful interpretation of trends. However, teams should monitor any shift in the age distribution of cases, which might indicate a changing proportion of non-cholera cases among patients seen.

However, up to this point in the outbreak, we have been collecting data from all patients regardless of age. This is because we collect aggregate data every day which does not include ages. Data is also reported via line lists which do include ages. This information takes more time to come in, but in the future we aim at analysing data by age and separate out the <2 year olds at that point for official reporting. So while respecting the case definition for Zimbabwe, we continue to collect case data for all ages to avoid delay in responding to the current outbreak.

6. Appendix 2: Weekly cases, deaths and attack rates by district week 6

Province	District	Total Population	Weekly Cases	Weekly Deaths	Weekly Attack Rate (/100,000)	Weekly Case Fatality Ratio
Harare	Chitungwiza	343,147	104	3	30	2.9
	Harare	1,548,553	461	13	30	2.8
	Total	1,891,700	565	16	30	2.8
Bulawayo	Bulawayo urban	718,278	13	1	2	7.7
Mashonaland Central	Bindura	150,981	234	3	155	1.3
	Centenary	114,407	6		5	0.0
	Guruve *	196,699			0	
	Mazowe	206,919	44	5	21	11.4
	Mt Darwin	212,291	368	6	173	1.6
	Rushinga	71,320	12	2	17	16.7
	Shamva	104,048			0	
	Total	1,056,665	664	16	63	2.4
Mashonaland East	Chikomba	127,646	5	0	4	0.0
	Goromonzi	188,890	43	0	23	0.0
	Hwedza	75,025			0	
	Marondera	164,193	9	0	5	0.0
	Mudzi	136,059			0	
	Murehwa	172,144			0	
	Mutoko	140,405			0	
	Seke	81,655	17	2	21	11.8
	UMP	110,755	117	3	106	2.6
	Total	1,196,772	191	5	16	2.6
Mashonaland West	Chegutu **	239,009	156	3	65	1.9
	Hurungwe	303,911	327	3	108	0.9
	Kadoma	250,766	481	10	192	2.1
	Kariba Rural	37,126	22	1	59	4.5
	Kariba Urban	25,285	15	0	59	0.0
	Makonde	124,487	117	4	94	3.4
	Zvimba	234,344	199	20	85	10.1
	Total	1,214,928	1,317	41	108	3.1
Manicaland	Buhera	233,598	462	12	198	2.6
	Chimanimani	122,390	94	15	77	16.0
	Chipinge	301,251	828	6	275	0.7
	Makoni	289,802	34	0	12	0.0
	Mutare	236,064	220	16	93	7.3
	Mutare City	180,953	8	0	4	0.0
	Mutasa	176,898	0	0	0	
	Nyanqa	124,494	69	11	55	15.9
	Total	1,665,450	1,715	60	103	3.5
Matebeleland North	Binga	127,391	34	1	27	2.9
	Lupane	104,738	0	0	0	
	Nkayi	119,131	10	6	8	60.0
	Total	351,260	44	7	13	15.9
Matabeleland South	Beitbridge	110,105	88	2	80	2.3
	Gwanda	138,020	1	0	1	0.0
	Plumtree	82,971	5	0	6	0.0
	Total	331,096	94	2	28	2.1
Masvingo	Bikita	166,595			0	
	Chiredzi	248,417	761	24	306	3.2
	Chivi	165,215	98	3	59	3.1
	Gutu	210,750	51	0	24	0.0
	Masvingo	280,196	134	5	48	3.7
	Mwenezi	134,004	52	2	39	3.8
	Zaka	196,495	39	6	20	15.4
	Total	1,401,672	1,135	40	81	3.5
Midlands	Chirumhanzu	74,764	29	0	39	0.0
	Gokwe North	227,546	719	14	316	1.9
	Gokwe South	311,684	249	9	80	3.6
	Gweru City (Mkoba)	149,468	6	0	4	0.0
	Kwekwe	303,094	124	7	41	5.6
	Mberengwa	194,682	145	1	74	0.7
	Shurugwi	93,828	0	0	0	
	Zvishavane	109,471	71	0	65	0.0
	Total	1,464,537	1,343	31	92	2.3
GD TOTAL	11,292,358	7,081	219	63	3.1	

* Population figures for Mbire are not available since the district was formed after the census (Old Guruve was split into Guruve and Mbire). The cases and deaths merged with Guruve

** Norton population figures not available but included in Chegutu district. Cases and deaths were aggregated with Chegutu