WEEKLY EPIDEMIOLOGICAL REPORT

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Cholera

Cholera is an acute diarrhoeal infection caused by ingestion of food or water contaminated with the bacterium *Vibrio cholerae*. Every year, there are an estimated 3 to 5 million cholera cases and 100 000 to120 000 deaths due to cholera. The short incubation period of two hours to five days, enhances the potentially explosive pattern of outbreaks.

Symptoms:

Cholera is an extremely virulent disease. **It affects both children and adults and can kill within hours**.

About 75% of people infected with *V. cholerae* do not develop any symptoms, although the bacteria are present in their faeces for 7–14 days after infection and are shed into the environment, potentially infecting other people.

Among people who develop symptoms, 80% have mild or moderate symptoms, while around 20% develop acute watery diarrhoea with severe dehydration. This can lead to death if untreated.

People with low immunity – such as malnourished children or people living with HIV are at a greater risk of death if infected.

History

During the 19th century, cholera spread across the world from its original reservoir in the Ganges delta in India. Six subsequent pandemics killed millions of people across all continents. The current (seventh) pandemic started in South Asia in 1961, and reached Africa in 1971 and the Americas in 1991. Cholera is now endemic in many countries.

***Vibrio cholerae* strains**

Two serogroups of *V. cholerae* – O1 and O139 – cause outbreaks. *V. cholerae* O1 causes the majority of outbreaks, while O139 – first identified in Bangladesh in 1992 – is confined to South-East Asia.

Non-O1 and non-O139 *V. cholerae* can cause mild diarrhoea but do not generate epidemics.

Recently, new variant strains have been detected in several parts of Asia and Africa. Observations suggest that these strains cause more severe cholera with higher case fatality rates. Careful epidemiological monitoring of circulating strains is recommended.

The main reservoirs of *V. cholerae* are people and aquatic sources such as brackish water and estuaries, often associated with algal blooms. Recent studies indicate that global warming creates a favourable environment for the bacteria.

Risk factors and disease burden

Cholera transmission is closely linked to inadequate environmental management. Typical at-risk areas include peri-urban slums, where basic infrastructure is not available, as well as camps for internally displaced people or refugees, where minimum requirements of clean water and sanitation are not met.

The consequences of a disaster – such as disruption of water and sanitation systems, ***or the displacement of populations to inadequate and overcrowded camps*** – can increase the risk of cholera transmission should the bacteria be present or introduced.

Epidemics have never arisen from dead bodies.

Cholera remains a global threat to public health and a key indicator of lack of social development. Recently, the re-emergence of cholera has been noted in parallel with the ever-increasing size of vulnerable populations living in insanitary conditions.

The number of cholera cases reported to WHO continues to rise. From 2004 to 2008, cases increased by 24% compared with the period from 2000 to 2004. For 2008 alone, a total of 190130 cases were notified from 56 countries, including 5143 deaths. Many more cases were unaccounted for due to limitations in surveillance systems and fear of trade and travel sanctions. The true burden of the disease is estimated to be 3–5 million cases and 100 000–120 000 deaths annually.

Prevention and control

A multidisciplinary approach based on prevention, preparedness and response, along with an efficient surveillance system, is the key for mitigating cholera outbreaks, controlling cholera in endemic areas and reducing deaths.

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Treatment

Cholera is an easily treatable disease. Up to 80% of people can be treated successfully through prompt administration of oral rehydration salts very severely dehydrated patients require administration of intravenous fluids. Such patients also require appropriate antibiotics to diminish the duration of diarrhoea, reduce the volume of rehydration fluids needed, and shorten the duration of *V. cholerae* excretion.

Mass administration of antibiotics is not recommended, as it has no effect on the spread of cholera and contributes to increasing antimicrobial resistance.

In order to ensure timely access to treatment, cholera treatment centres (CTCs) should be set up among the affected populations. With proper treatment, the case fatality rate should remain below 1%.

Important points to travellers

By taking a few basic precautions, travellers can protect themselves against cholera and most other food and waterborne diseases. Above all, travelers should be very careful with food and water, including ice, and remember this simple rule: **boil it, cook it, peel it, or forget it**.

- Drink only water that has been boiled or disinfected with chlorine, iodine or other suitable products. Products for disinfecting water are generally available in pharmacies.
- Beverages such as hot tea or coffee, wine, beer, carbonated water or soft drinks, and bottled or packaged fruit juices are usually safe to drink.
- Avoid ice, unless you are sure that it is made from safe water.
- Eat food that has been thoroughly cooked and is still hot when served. Cooked food that has been held at room temperature for several hours and served without being reheated can be an important source of infection.
- Avoid raw seafood and other raw foods. The exceptions are fruits and vegetables that you have peeled or shelled yourself.
- Boil unpasteurized milk before drinking it.

Outbreak response

Once an outbreak is detected, the usual intervention strategy is to reduce deaths by ensuring prompt access to treatment, and to control the spread of the disease by providing safe water, proper sanitation and health education for improved hygiene and safe food handling practices by the community. The provision of safe water and sanitation is a formidable challenge but remains the critical factor in reducing the impact of cholera.

Oral cholera vaccines

There are two types of safe and effective oral cholera vaccines currently available in the market. Both are whole-cell killed vaccines, one with a recombinant B-sub unit and the other without. Both have sustained protection of over 50% lasting for two years in endemic settings.

One vaccine (Dukoral) is WHO prequalified and licensed in over 60 countries. Dukoral has been shown to provide short-term protection of 85–90% against *V. cholerae* O1 among all age groups at 4–6 months following immunization.

The other vaccine (Shanchol) is pending WHO prequalification and provides longer-term protection against *V. cholerae* O1 and O139 in children under five years of age.

Both vaccines are administered in two doses given between seven days and six weeks apart. The vaccine with the B-subunit (Dukoral) is given in 150 ml of safe water.

WHO recommends that immunization with currently available cholera vaccines be used in conjunction with the usually recommended control measures in areas where cholera is endemic as well as in areas at risk of outbreaks. Vaccines provide a short term effect while longer term activities like improving water and sanitation are put in place.

When used, vaccination should target vulnerable populations living in high risk areas and should not disrupt the provision of other interventions to control or prevent cholera epidemics. The WHO 3-step decision making tool aims at guiding health authorities in deciding whether to use cholera vaccines in complex emergency settings.

The use of the parenteral cholera vaccine has never been recommended by WHO due to its low protective efficacy and the high occurrence of severe adverse reactions.

Travel and trade

Today, no country requires proof of cholera vaccination as a condition for entry. Past experience shows that quarantine measures and embargoes on the movement of people and goods are unnecessary. Isolated cases of cholera related to imported food have been associated with food in the possession of individual travellers. Consequently, import restrictions on food produced under good manufacturing practices, based on the sole fact that cholera is epidemic or endemic in a country, are not justified.

Countries neighbouring cholera-affected areas are encouraged to strengthen disease surveillance and national preparedness to rapidly detect and respond to outbreaks should cholera spread across borders. Further, information should be provided to travellers and the community on the potential risks and symptoms of cholera, together with precautions to avoid cholera, and when and where to report cases.

WHO Global Task Force on Cholera

WHO Global Task Force on Cholera Control was launched in 1992 following the adoption of resolution WHA44.6 on cholera by the Forty-fourth World Health Assembly. The aim was to reduce morbidity and mortality associated with the disease and to address the social and economic consequences of cholera.

This partnership brings together governmental and non-governmental organizations, UN agencies, and scientific institutions to coordinate activities against epidemic enteric diseases and develop technical guidelines and training materials for cholera control.

To date, the Task Force has provided technical advice and support for cholera control and prevention at country level; training of health professionals at national, regional and international levels in prevention, preparedness and response of diarrhoeal disease outbreaks; and the dissemination of information on cholera and other epidemic prone enteric diseases to health professionals and the general public. Currently, priority activities are aimed at:

- encouraging improved surveillance and using data to identify high risk areas and guide intervention.
- providing evidence based support to countries for preparedness and response
- gaining evidence on the use of Oral Cholera Vaccines as an additional public health tool to diminish incidence of cholera in high risk areas and vulnerable groups;
- linking health and management of the environment in order to improve access to safe water for vulnerable populations and diminish incidence of waterborne diseases.

Source: World Health Organization

Table 1: Vaccine-preventable Diseases & AFP

09th – 15th October 2010(41st Week)

Disease	No. of Cases by Province									Number of cases during current week in 2010	Number of cases during same week in 2009	Total number of cases to date in 2010	Total number of cases to date in 2009	Difference between the number of cases to date in 2010 & 2009
	W	C	S	N	E	NW	NC	U	Sab					
Acute Flaccid Paralysis	00	00	01	00	00	00	00	00	00	01	00	67	57	+ 17.53 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	-
Measles	01	00	00	00	00	00	00	00	00	01	04	83	153	- 45.7 %
Tetanus	01 CB=1	00	00	00	00	00	00	00	01 RP=1	02	01	20	22	- 09.1 %
Whooping Cough	00	00	00	00	00	01	00	00	00	01	01	28	55	- 49.1 %
Tuberculosis	103	95	10	18	04	16	04	00	28	278	291	8077	8249	-02.1 %

Table 2: Newly Introduced Notifiable Disease

09th – 15th October 2010(41st Week)

Disease	No. of Cases by Province									Number of cases during current week in 2010	Number of cases during same week in 2009	Total number of cases to date in 2010	Total number of cases to date in 2009	Difference between the number of cases to date in 2010 & 2009
	W	C	S	N	E	NW	NC	U	Sab					
Chickenpox	15	05	10	00	02	04	11	04	02	54	63	2759	13495	- 79.5 %
Meningitis	05 CB=1 KL=4	00	00	00	01 TR=1	01 KR=1	06 AP=6	00	02 RP=1 KG=1	15	48	1326	1038	+ 27.4 %
Mumps	04	02	02	00	01	02	00	00	01	12	12	948	1505	- 37.0 %
Leishmaniasis	00	00	15 HB=14 MT=1	00	00	01 KR=1	01 AP=1	00	00	17	01	305	561	- 45.6 %

Key to Table 1 & 2

Provinces: W: Western, C: Central, S: Southern, N: North, E: East, NC: North Central, NW: North Western, U: Uva, Sab: Sabaragamuwa.

DPDHS Divisions: CB: Colombo, GM: Gampaha, KL: Kalutara, KD: Kandy, ML: Matale, NE: Nuwara Eliya, GL: Galle, HB: Hambantota, MT: Matara, JF: Jaffna, KN: Killinochchi, MN: Mannar, VA: Vavuniya, MU: Mullaitivu, BT: Batticaloa, AM: Ampara, TR: Trincomalee, KM: Kalmunai, KR: Kurunegala, PU: Puttalam, AP: Anuradhapura, PO: Polonnaruwa, BD: Badulla, MO: Moneragala, RP: Ratnapura, KG: Kegalle.

Data Sources:

Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps.

Special Surveillance: Acute Flaccid Paralysis.

Leishmaniasis is notifiable only after the General Circular No: 02/102/2008 issued on 23 September 2008.

Dengue Prevention and Control Health Messages

Reduce, Reuse or Recycle the plastic and polythene collected in your home and help to minimize dengue mosquito breeding.

Table 4: Selected notifiable diseases reported by Medical Officers of Health

09th – 15th October 2010(41st Week)

DPDHS Division	Dengue Fever / DHF*		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Returns received timely
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	%
Colombo	60	5573	6	247	0	14	12	144	0	39	17	497	0	7	2	58	0	1	**85**
Gampaha	5	3686	0	136	0	25	0	45	0	20	21	404	0	14	2	96	0	4	**60**
Kalutara	12	1744	9	217	0	13	0	28	0	74	9	344	1	4	3	37	0	2	**83**
Kandy	15	1550	8	284	1	5	1	30	1	15	7	104	3	125	1	125	0	1	**91**
Matale	5	569	3	278	0	6	0	34	0	72	1	91	0	6	0	49	0	1	**75**
Nuwara	2	211	3	318	0	0	0	108	0	84	2	26	0	57	0	41	0	0	**85**
Galle	10	1067	4	235	0	7	2	8	0	18	19	123	0	19	3	18	0	4	**89**
Hambantot	2	769	1	67	0	7	0	4	0	13	0	82	3	85	2	17	0	0	**91**
Matara	2	564	0	156	0	8	0	11	0	49	7	309	3	126	1	18	0	0	**88**
Jaffna	5	2722	10	251	0	5	4	506	0	8	0	1	1	113	3	64	0	2	**75**
Kilinochc	0	40	0	14	0	0	0	10	0	1	0	3	0	0	0	1	0	0	**0**
Mannar	2	537	1	44	0	2	0	42	0	10	0	0	0	1	0	17	0	0	**50**
0Vavuniya	0	571	1	45	0	3	1	43	1	12	0	2	0	1	1	13	0	1	**50**
Mullaitivu	1	22	0	6	0	0	0	3	0	0	0	0	0	2	0	1	0	0	**17**
Batticaloa	0	1181	3	161	0	4	0	34	2	38	0	12	0	3	0	5	0	3	**79**
Ampara	0	145	0	96	0	1	0	8	0	65	0	30	0	1	0	11	0	0	**0**
Trincomale	3	944	3	141	0	14	0	7	0	11	7	28	0	18	0	14	0	1	**55**
Kurunegala	7	1354	8	272	0	19	1	40	0	15	6	275	0	52	3	113	0	4	**81**
Puttalam	5	954	5	134	0	7	0	49	0	124	0	70	0	1	0	21	0	1	**67**
Anuradhap	0	1005	1	84	0	11	1	14	3	46	1	76	0	25	1	46	0	4	**79**
Polonnaru	2	383	2	96	0	1	1	7	0	8	1	59	0	2	1	43	0	0	**86**
Badulla	5	1251	7	186	0	1	1	81	0	27	2	75	2	95	3	103	0	0	**60**
Monaragala	8	976	2	156	0	1	0	37	0	7	1	33	0	75	3	84	0	3	**64**
Ratnapura	16	2676	2	434	0	5	0	17	0	26	2	354	1	58	0	89	0	2	**56**
Kegalle	2	855	0	127	0	15	0	61	0	22	6	281	1	26	0	106	0	0	**45**
Kalmunai	2	511	2	268	0	3	0	8	0	9	0	3	0	0	0	11	0	1	**46**
SRI LANKA	**171**	**31860**	**81**	**4480**	**01**	**177**	**24**	**1379**	**07**	**813**	**109**	**3282**	**15**	**916**	**29**	**1201**	**00**	**35**	**70**

Source: Weekly Returns of Communicable Diseases WRCD).
*Dengue Fever / DHF refers to Dengue Fever / Dengue Haemorrhagic Fever.
**Timely refers to returns received on or before 15th October , 2010 Total number of reporting units =311. Number of reporting units data provided for the current week: 226
A = Cases reported during the current week. B = Cumulative cases for the year.

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Comments and contributions for publication in the WER Sri Lanka are welcome. However, the editor reserves the right to accept or reject items for publication. All correspondence should be mailed to The Editor, WER Sri Lanka, Epidemiological Unit, P.O. Box 1567, Colombo or sent by E-mail to chepid@sltnet.lk.

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