WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit
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Campylobacter

Campylobacter which means "curved bacteria" is a genus of Gram-negative bacteria which could cause a gastrointestinal infection called campylobacteriosis.
Campylobacter is one of the four main global causes of diarrhoeal diseases. The foodborne disease burden is quite significant with almost 1 in 10 people falling ill and 33 million healthy life years are being lost annually.
Diarrhoea caused by Campylobacter has a highly important socio-economic outlook due to the duration of the disease, high incidence and possible complications. In developing countries, Campylobacter infections in children under the age of 2 years are especially frequent, sometimes resulting in death.

Morphology

Campylobacter is mainly spiral-shaped, "S"-shaped, or curved, rod-shaped bacteria. It is a gram-negative bacteria. There are 17 species and 6 subspecies assigned to the genus Campylobacter currently. The most frequently reported in human diseases are C. jejuni (subspecies jejuni) and C. coli. Other species such as C. lari and C. upsaliensis have also been isolated from patients with the diarrhoeal disease which has been reported less frequently.

Disease

The onset of disease symptoms usually occurs 2 to 5 days after infection with the bacteria. It can range from 1 to 10 days.
The most common clinical symptoms include

- Diarrhoea (frequently bloody)
- Abdominal pain
- Fever
- Headache
- Nausea
- Vomiting.

The symptoms typically last 3 to 6 days.

Death from campylobacteriosis is rare. It is usually confined to very young children, elderly patients, or those already suffering from another serious disease such as AIDS.

Complications

Bacteremia (presence of bacteria in the blood), hepatitis, pancreatitis and miscarriage have been reported with various degrees of frequency.
Post-infection complications include reactive arthritis and neurological disorders such as Guillain-Barre syndrome, a polio-like form of paralysis that can result in respiratory and severe neurological dysfunction.

Sources and transmission

Campylobacter species are widely distributed in most warm-blooded animals. They are prevalent in animals such as poultry, cattle, pigs, sheep and ostriches. It is also prevalent among pets, including cats and dogs. The bacteria have also been found in shellfish.
The main route of transmission is believed to be foodborne, via undercooked meat and meat products. Raw or contaminated milk is also a mode of transmission. Contaminated water or ice is also a source of infection. A proportion of cases occur following contact with contaminated water during recreational activities.

Campylobacteriosis is a zoonosis. The disease is transmitted to humans from animals or animal products. Carcasses or meat are contaminated by Campylobacter from faeces during slaughter. Campylobacter seldom causes disease in animals.

Treatment

Treatment is not generally required. Electrolyte replacement and rehydration are sufficient in the majority of cases. Antimicrobial treatment is recommended in invasive cases when bacteria invade the intestinal mucosa cells and damage the tissues or to eliminate the carrier state.
Levofloxacin, Azithromycin or Ciprofloxacin can be used in that context.

Prevention methods

Several strategies can be used to prevent the disease from Campylobacter.

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The most common being

- Wash hands before cooking and after touching raw poultry or meat.
- Keep uncooked meat and poultry away from other foods.
- Wash hands after touching a pet or pet faeces.
- Anyone with diarrhoea washes his or her hands well.

Prevention is based on control measures at all stages of the food chain, from agricultural production on a farm to processing, manufacturing and preparation of foods both commercially and domestically.
Measures to reduce the prevalence of Campylobacter in poultry include enhanced biosecurity to avoid transmission of Campylobacter from the environment to the flock of birds on the farm.
Training in hygienic food handling for abattoir workers and raw meat producers is essential to keep contamination to a minimum.
Prevention methods against infection in domestic kitchens are similar to those used against other foodborne bacterial diseases.
Bactericidal treatment, such as heating (for example, cooking or pasteurization) or irradiation, is the only effective method of eliminating Campylobacter from contaminated foods.

Worldwide response

In partnership with other stakeholders, WHO is strongly advocating the importance of food safety as an essential element in ensuring access to safe and nutritious diets. WHO is providing policies and recommendations that cover the entire food chain from production to consumption, making use of different types of expertise across different sectors.
WHO is working towards the strengthening of food safety systems in an increasingly globalized world. Setting international food safety standards, enhancing disease surveillance, educating consumers and training food handlers in safe food handling is amongst the most critical interventions in the prevention of foodborne illnesses.
In collaboration with the Food and Agriculture Organization of the United Nations (FAO), the World Organization for Animal Health (OIE) and the WHO Collaborating Centre at the University of Utrecht, WHO has published the report The Global-View of Campylobacteriosis in 2012.

Recommendations for the public and travellers

- Ensure food is properly cooked and still hot when served.
- Avoid raw milk and products made from raw milk. Drink only pasteurized or boiled milk.
- Avoid ice unless it is made from safe water.
- When the safety of drinking water is questionable, boil it, or if this is not possible, disinfect it with a reliable, slow-release disinfectant agent (usually available at pharmacies).
- Wash hands thoroughly and frequently using soap, in particular after contact with pets or farm animals, or after having been to the toilet.
- Wash fruits and vegetables carefully, particularly if they are eaten raw. Whenever possible, vegetables and fruits should be peeled.

Recommendations for food handlers

- Both professional and domestic food handlers should be vigilant while preparing food and should observe hygienic rules of food preparation.
- Professional food handlers who suffer from fever, diarrhoea, vomiting, or visible infected skin lesions should report to their employer immediately.
- The WHO Five keys to safer food serve as the basis for educational programmes to train food handlers and educate consumers. They are especially important in preventing food poisoning.

  The Five keys are:

  - keep clean
  - separate raw and cooked
  - cook thoroughly
  - keep food at safe temperatures
  - Use safe water and raw materials.

Compiled by -
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Source
Campylobacter Infection- ***https://www.webmd.com/food-recipes/food-poisoning/what-is-campylobacter-infection#2***
*World Health Organization- Campylobacter -****https://www.who.int/news-room/fact-sheets/detail/campylobacter***

Table 1 : Water Quality Surveillance
Number of microbiological water samples August 2019

District	MOH areas	No: Expected *	No: Received
Colombo	15	90	**64**
Gampaha	15	90	**NR**
Kalutara	12	72	**NR**
Kalutara NIHS	2	12	**NR**
Kandy	23	138	**NR**
Matale	13	78	**70**
Nuwara Eliya	13	78	**NR**
Galle	20	120	**NR**
Matara	17	102	**17**
Hambantota	12	72	**NR**
Jaffna	12	72	**77**
Kilinochchi	4	24	**24**
Manner	5	30	**NR**
Vavuniya	4	24	**NR**
Mullatvu	5	30	**NR**
Batticaloa	14	84	**50**
Ampara	7	42	**NR**
Trincomalee	11	66	**NR**
Kurunegala	29	174	**108**
Puttalam	13	78	**NR**
Anuradhapura	19	114	**NR**
Polonnaruwa	7	42	**47**
Badulla	16	96	**156**
Moneragala	11	66	**NR**
Rathnapura	18	108	**104**
Kegalle	11	66	**18**
Kalmunai	13	78	**NR**

* No of samples expected (6 / MOH area / Month)
NR = Return not received

Table 1: Selected notifiable diseases reported by Medical Officers of Health 07th – 13th Sep 2019 (37th Week)

RDHS Division	Dengue Fever		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Chickenpox		Meningitis		Leishmaniasis		WRCD	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	T*	C**
Colombo	349	9809	0	42	1	10	0	18	7	57	2	155	0	8	0	8	0	0	7	358	0	39	0	4	**48**	**100**
Gampaha	349	7889	1	31	0	7	0	3	0	25	3	76	0	3	0	7	0	1	1	329	1	20	1	140	**51**	**97**
Kalutara	151	4736	3	63	0	6	1	16	0	58	15	430	0	6	0	4	0	1	16	527	4	92	0	3	**63**	**100**
Kandy	141	2997	1	83	0	10	0	3	5	24	3	62	5	76	2	5	0	2	6	215	2	54	0	40	**63**	**100**
Matale	14	437	0	24	0	3	0	1	0	6	0	41	0	6	0	7	0	2	3	75	0	4	7	182	**57**	**100**
NuwaraEliya	13	188	1	93	0	2	0	8	1	4	1	39	3	61	1	8	0	0	1	106	0	36	0	0	**26**	**100**
Galle	98	4763	0	39	0	7	0	3	0	5	5	322	0	43	1	41	0	0	4	344	0	39	0	4	**61**	**99**
Hambantota	53	1264	2	18	0	3	0	1	0	7	1	94	2	100	0	4	0	1	2	242	1	32	29	623	**72**	**100**
Matara	90	2451	2	20	0	4	0	2	2	18	1	296	1	33	0	16	0	1	7	244	1	15	16	433	**60**	**100**
Jaffna	43	2227	10	200	0	13	0	23	15	91	1	29	1	273	0	4	0	0	8	251	0	19	0	0	**21**	**93**
Kilinochchi	0	124	2	19	0	1	0	11	0	0	0	19	0	25	0	1	0	0	0	7	0	7	3	14	**51**	**100**
Mannar	0	79	0	3	0	1	0	9	0	1	0	1	0	8	0	0	0	0	0	0	0	2	0	1	**54**	**100**
Vavuniya	2	220	0	22	0	10	0	24	0	13	0	53	0	5	0	0	0	0	4	72	0	9	1	2	**57**	**99**
Mullaitivu	0	121	0	11	0	0	0	13	0	3	0	22	0	8	0	0	0	0	0	13	0	7	0	4	**28**	**99**
Batticaloa	14	1122	9	136	0	2	0	13	4	37	0	42	0	1	0	0	0	1	0	217	0	26	0	0	**50**	**100**
Ampara	2	197	1	58	0	2	0	0	0	14	0	36	0	2	1	11	0	0	4	235	0	12	0	4	**57**	**100**
Trincomalee	9	953	1	22	0	0	0	0	0	55	2	15	0	18	0	5	0	1	0	203	0	9	0	2	**31**	**100**
Kurunegala	31	1473	0	62	0	16	0	6	0	30	1	125	1	20	1	21	0	2	3	478	1	84	20	601	**60**	**100**
Puttalam	23	682	1	21	0	3	0	1	4	12	1	32	0	11	0	2	0	0	1	120	0	41	0	9	**61**	**100**
Anuradhapura	7	497	0	41	0	8	0	4	0	11	1	101	0	33	0	22	0	2	0	413	0	76	4	414	**42**	**98**
Polonnaruwa	13	274	1	25	0	3	0	1	0	2	1	62	0	4	0	16	0	2	2	262	2	17	11	221	**60**	**100**
Badulla	24	704	3	68	0	6	1	9	0	78	1	165	1	100	0	13	0	0	8	260	2	154	0	13	**61**	**100**
Monaragala	0	333	0	36	0	4	0	0	0	79	0	189	0	82	0	41	0	0	0	212	0	112	0	22	**60**	**84**
Ratnapura	75	2266	0	81	1	28	1	9	0	13	24	731	0	33	1	27	0	4	16	311	2	136	0	131	**46**	**100**
Kegalle	67	1329	1	33	0	18	0	2	0	28	2	172	1	53	0	91	0	0	9	384	0	45	0	40	**67**	**100**
Kalmune	9	602	5	67	0	1	0	1	6	61	0	27	0	3	0	4	0	0	3	194	0	20	0	0	**63**	**100**
SRILANKA	**1577**	**47737**	**44**	**1318**	**2**	**168**	**3**	**181**	**44**	**732**	**65**	**3336**	**15**	**1015**	**7**	**358**	**0**	**20**	**105**	**6072**	**16**	**1107**	**92**	**2907**	**54**	**99**

Source: Weekly Returns of Communicable Diseases (WRCD).

*T=Timeliness refers to returns received on or before 13 th September , 2019 Total number of reporting units 353 Number of reporting units data provided for the current week: 324 C**-Completeness

A = Cases reported during the current week. **B** = Cumulative cases for the year.

Table 2: Vaccine-Preventable Diseases & AFP

07th – 13th Sep 2019 (37th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2019	Number of cases during same week in 2018	Total number of cases to date in 2019	Total number of cases to date in 2018	Difference between the number of cases to date in 2019 & 2018
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	01	00	00	00	00	01	00	00	02	00	58	43	34.8 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	00	00	01	01	00	00	01	00	01	04	04	250	251	- 0.3 %
Measles	00	01	00	00	00	00	00	00	01	02	02	244	91	168.1 %
Rubella	00	00	00	00	00	00	00	00	00	00	00	00	04	0 %
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Tetanus	00	00	01	00	00	00	00	00	00	01	00	17	16	6.25 %
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Japanese Encephalitis	00	00	00	00	00	00	00	00	00	00	01	09	24	- 62.5 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	36	37	- 2.7 %
Tuberculosis	122	19	17	02	04	01	00	06	17	188	163	6037	6090	- 0.8 %

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.

RDHS 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, Neonatal Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps., Rubella, CRS,

Special Surveillance: AFP* (Acute Flaccid Paralysis), Japanese Encephalitis

CRS =**Congenital Rubella Syndrome

NA = Not Available

Influenza Surveillance in Sentinel Hospitals - ILI & SARI							
Month	Human				Animal		
	No Total	No Positive	Infl A	Infl B	Pooled samples	Serum Samples	Positives
September	75	13	1	12			

Source: Medical Research Institute & Veterinary Research Institute

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ON STATE SERVICE

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