



# WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit  
Ministry of Health

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## Campylobacter Infection

### Key facts

- Campylobacter is a bacterium that causes intestinal infections.
- Campylobacter infections are generally mild, but can be fatal among very young children, elderly and immunosuppressed individuals.
- The bacteria normally inhabit the intestinal tract of warm-blooded animals such as poultry and cattle, and are frequently detected in foods derived from these animals.
- Campylobacter species can be killed by heat and thoroughly cooking food.
- To prevent Campylobacter infections, make sure to follow basic food hygiene practices when preparing food.

Campylobacter bacteria are a major cause of foodborne diarrhoeal illness in humans and are the most common bacteria that cause gastroenteritis worldwide. In developed and developing countries, they cause more cases of diarrhoea than foodborne Salmonella. The high incidence of Campylobacter diarrhoea, as well as its duration and possible sequelae, makes it highly important from a socio-economic perspective. In developing countries, Campylobacter infections in children under the age of two years are especially frequent, sometimes resulting in death.

Campylobacter are mainly spiral-shaped, S-shaped or curved, rod-shaped bacteria. Currently, there are 17 species and 6 subspecies assigned to the genus Campylobacter, of which 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 diar-

rhoeal disease, but are reported less frequently. Most species prefer a micro-aerobic atmosphere (containing 3-10% oxygen) for growth. Some species tend to favour an anaerobic environment (containing little or no oxygen), although they will also grow under micro-aerobic conditions.

### The disease

- Campylobacteriosis is the disease caused by the infection with Campylobacter. The onset of disease symptoms usually occurs two to five days after infection with the bacteria, but can range from one to ten days.
- The most common clinical symptoms of Campylobacter infections include diarrhoea (frequently with blood in the faeces), abdominal pain, fever, headache, nausea, and/or vomiting. The symptoms typically last three to six days.
- Death from Campylobacteriosis is rare and is usually confined to very young or elderly patients, or to those already suffering from another serious disease such as AIDS.

Complications such as bacteraemia (presence of bacteria in the blood), hepatitis, pancreatitis (infections of liver and pancreas, respectively), and miscarriage have all been reported with various degrees of frequency. Post-infection complications may include reactive arthritis (painful inflammation of the joints which can last for several months) and neurological disorders such as Guillain-Barré syndrome, a polio-like form of paralysis that can result in respiratory and severe neurological dysfunction or death in a small number of cases.

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### Sources and transmission

Campylobacter species are widely distributed in most warm-blooded animals. They are prevalent in food animals such as poultry, cattle, pigs, sheep, ostriches and shellfish; and in pets, including cats and dogs.

The main route of transmission is generally believed to be foodborne, via undercooked meat and meat products, as well as raw or contaminated milk. 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, a disease transmitted to humans from animals or animal products. Most often, carcasses or meat are contaminated by Campylobacter from faeces during slaughtering. In animals, Campylobacter seldom causes disease.

The relative contribution of each of the above sources to the overall burden of disease is unclear but consumption of undercooked contaminated poultry is believed to be a major contributor. Since common-source outbreaks account for a rather small proportion of cases, the vast majority of reports refer to sporadic cases, with no easily discernible pattern.

Estimating the importance of all known sources is therefore extremely difficult. In addition, the wide occurrence of Campylobacter also hinders the development of control strategies throughout the food chain. However, in countries where specific strategies have been put in place to reduce the prevalence of Campylobacter in live poultry, a similar reduction in human cases is observed.

### Treatment

Treatment is not generally required, except electrolyte replacement and rehydration. Antimicrobial treatment (erythromycin, tetracycline, quinolones) is recommended in invasive cases (when bacteria invade the intestinal mucosa cells and damage the tissues) or to eliminate the carrier state (the condition of people who harbour Campylobacter in their bodies and keep shedding the bacteria while remaining asymptomatic).

### Prevention methods

- 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.
- In countries without adequate sewage disposal systems, faeces and articles soiled with faeces may need to be disinfected before disposal.
- 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. This control option is feasible only where birds are kept in closed housing conditions.

- Good hygienic slaughtering practices reduce the contamination of carcasses by faeces, but will not guarantee the absence of Campylobacter from meat and meat products. Education 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 (e.g. cooking or pasteurization) or irradiation is the only effective method of eliminating Campylobacter from contaminated foods.

### WHO response

In partnership with other stakeholders, WHO is developing policies that will further promote the safety of food. These policies cover the entire food chain from production to consumption and will make use of different types of expertise.

WHO promotes the strengthening of food safety systems, promoting good manufacturing practices and educating retailers and consumers about appropriate food handling and avoiding contamination. Education of consumers and training of food handlers in safe food handling is one of the most critical interventions in the prevention of foodborne illnesses.

### Source-

Campylobacter, available at <http://www.who.int/mediacentre/factsheets/fs255/en/>

Compiled by Dr.H.H.W.S.B Herath of the Epidemiology Unit

Table 1: Selected notifiable diseases reported by Medical Officers of Health 19th - 25th Sept 2015 (39th 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	96	6759	7	149	1	10	2	81	0	110	4	222	0	9	0	29	0	3	13	374	0	33	0	0	88	13
Gampaha	43	2956	1	70	1	7	1	28	0	27	16	299	1	10	3	116	0	0	5	212	1	23	0	2	100	0
Kalutara	9	1063	2	82	0	4	2	39	1	79	12	254	0	3	0	30	0	2	0	227	0	40	0	0	62	38
Kandy	21	878	4	100	0	6	0	27	1	40	1	93	1	55	4	113	0	0	4	178	1	19	1	12	91	9
Matale	1	347	0	35	0	1	0	8	0	5	0	51	0	8	0	27	0	0	0	24	0	21	0	16	31	69
Nuwarateliya	1	122	3	271	1	4	2	24	0	7	0	32	4	60	1	45	0	0	3	109	0	45	0	1	100	0
Galle	9	611	0	63	0	3	0	7	0	21	3	182	4	70	0	7	0	0	3	220	0	42	0	2	65	35
Hambantota	4	236	2	30	0	1	0	8	0	25	1	77	3	46	0	32	0	0	3	95	0	11	1	222	92	8
Matara	6	302	1	54	0	6	0	4	0	44	8	150	0	33	2	31	0	0	3	196	1	17	2	105	100	0
Jaffna	8	1287	37	705	0	9	1	161	0	71	0	14	2	545	0	11	0	2	2	170	0	15	0	0	92	8
Kilinochchi	0	56	0	67	0	0	0	14	0	31	0	1	0	23	0	0	0	1	0	15	0	0	0	0	50	50
Mannar	2	79	1	13	0	1	0	5	0	3	0	8	1	21	0	0	0	0	0	7	0	0	0	1	100	0
Vavuniya	4	102	0	16	0	6	3	67	2	14	0	17	0	13	1	2	0	2	1	38	0	15	0	6	75	25
Mullaitivu	0	115	0	24	0	2	0	12	0	1	0	5	0	9	0	3	0	1	0	5	0	3	1	6	80	20
Batticaloa	1	1326	4	270	0	7	0	26	0	145	0	12	0	4	0	11	0	1	1	51	0	16	0	0	57	43
Ampara	2	46	1	39	0	1	0	1	5	15	0	13	0	2	2	7	0	0	0	172	0	5	0	3	57	43
Trincmalee	1	515	4	77	0	0	0	31	0	35	0	14	1	22	13	21	0	1	0	79	0	7	1	4	58	42
Kurunegala	2	988	3	141	0	2	0	7	0	17	0	203	0	28	0	37	0	6	7	331	0	30	3	107	78	22
Puttalam	1	553	3	43	0	4	0	7	0	9	2	30	0	18	0	1	0	0	1	46	0	24	0	2	54	46
Anuradhapura	2	317	10	87	1	3	0	3	0	59	0	185	0	20	0	13	0	1	2	146	1	29	27	283	68	32
Polonnaruwa	1	175	2	34	0	4	0	12	0	5	0	67	0	1	0	6	0	0	2	113	0	21	1	98	71	29
Badulla	4	429	7	174	0	7	0	9	4	16	4	60	7	116	8	167	1	3	3	174	1	74	0	6	88	12
Monaragala	1	154	2	96	0	4	0	15	0	5	1	137	5	70	16	289	0	1	0	82	3	26	4	34	91	9
Ratnapura	3	790	1	238	1	16	0	40	0	8	3	265	0	55	8	200	0	1	3	127	0	47	0	16	72	28
Kegalle	12	464	1	58	0	11	3	67	2	14	7	248	3	44	3	76	0	0	3	186	4	45	0	0	91	9
Kalmunei	0	453	0	98	0	1	0	1	1	49	0	7	0	0	0	3	0	0	0	97	0	9	0	0	38	62
<b>SRILANKA</b>	<b>234</b>	<b>21123</b>	<b>96</b>	<b>3034</b>	<b>5</b>	<b>120</b>	<b>14</b>	<b>704</b>	<b>16</b>	<b>855</b>	<b>62</b>	<b>2646</b>	<b>32</b>	<b>1285</b>	<b>61</b>	<b>1277</b>	<b>1</b>	<b>25</b>	<b>59</b>	<b>3474</b>	<b>12</b>	<b>617</b>	<b>41</b>	<b>926</b>	<b>76</b>	<b>24</b>

Source: Weekly Returns of Communicable Diseases (WRCD).

\*T=Timeliness refers to returns received on or before 25th Sept., 2015 Total number of reporting units 337 Number of reporting units data provided for the current week: 259 C\*\*=Completeness A = Cases reported during the current week. B = Cumulative cases for the year.

**Table 2: Vaccine-Preventable Diseases & AFP**

19<sup>th</sup> - 25<sup>th</sup> Sept 2015 (40<sup>th</sup> Week)

Disease	No. of Cases by Province									Number of cases during current week in 2015	Number of cases during same week in 2014	Total number of cases to date in 2015	Total number of cases to date in 2014	Difference between the number of cases to date in 2014 & 2015
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	01	00	00	00	00	00	00	00	01	00	56	61	-8.2%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Mumps	01	00	02	03	00	00	00	00	02	08	05	295	539	-45.2%
Measles	06	04	03	00	02	03	00	00	09	27	32	2238	2733	-18.1%
Rubella	00	00	00	00	00	00	00	00	00	00	01	08	16	-50%
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	04	-100%
Tetanus	00	00	00	00	00	00	00	00	00	00	00	14	11	+27.2%
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	00	07	22	-68.1%
Whooping Cough	01	00	00	00	02	00	00	01	01	05	03	76	50	+52%
Tuberculosis	27	11	12	00	03	08	12	00	05	78	185	7335	7442	-1.4%

**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

AFP and all clinically confirmed Vaccine Preventable Diseases except Tuberculosis and Mumps should be investigated by the MOH

**Dengue Prevention and Control Health Messages**

**Look for plants such as bamboo, bohemia, rampe and banana in your surroundings and maintain them**

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**ON STATE SERVICE**

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