



WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit
Ministry of Health

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Foodborne Illnesses

Introduction

Foodborne illnesses are infections or irritations of the gastrointestinal (GI) tract caused by food or beverages that contain harmful bacteria, parasites, viruses or chemicals. Common symptoms of foodborne illnesses include vomiting, diarrhea, abdominal pain, fever and chills.

Most foodborne illnesses are acute and most people recover on their own without treatment. Rarely, foodborne illnesses may lead to more serious complications. However, some people are more likely to develop foodborne illnesses or complications of foodborne illnesses than others.

- infants and children
- pregnant women and their foetuses
- older adults
- people with weak immune systems

These groups also have a greater risk of developing severe symptoms or complications of foodborne illnesses.

Causes

The majority of foodborne illnesses are caused by harmful bacteria and viruses. Some parasites and chemicals also cause foodborne illnesses.

Bacteria-some harmful bacteria may already be present in foods when they are purchased. Raw foods including meat, poultry, fish and shellfish, eggs, unpasteurized milk, dairy products and fresh produce often contain bacteria that cause foodborne illnesses. Bacteria can contaminate food—making it harmful to eat—at any time during growth, harvesting or slaughter, processing, storage and shipping.

Foods may also be contaminated with bacteria during food preparation in a restaurant or home kitchen. If hot food is not kept hot enough or cold food is not kept cold enough, bacteria may multiply. Bacteria multiply quickly when the tem-

perature of food is between 40 and 140 degrees Fahrenheit. Bacteria multiply more slowly when food is refrigerated and freezing food can further slow or even stop the spread of bacteria. However, bacteria in refrigerated or frozen foods become active again when food is brought to room temperature. Cooking food thoroughly kills bacteria.

Types of bacteria causing foodborne illnesses

Salmonella is found in many foods, including raw and undercooked meat, poultry, dairy products and seafood. Salmonella may also be present on egg shells and inside eggs.

Campylobacter jejuni is found in raw or undercooked chicken and unpasteurized milk.

Shigella spreads from person to person. These bacteria are present in the stools of people who are infected. If people who are infected do not wash their hands thoroughly after using the toilette, they can contaminate food that they handle or prepare. Water contaminated with infected stools can also contaminate produce in the field. Escherichia coli (E. coli), which includes several different strains, only a few of which cause illness in humans. E. coli O157:H7 is the strain that causes the most severe illness. Common sources of E. coli include raw or undercooked hamburger, unpasteurized fruit juices and milk and fresh produce.

Listeria monocytogenes is found in raw and undercooked meats, unpasteurized milk, soft cheeses and ready-to-eat deli meats and hot dogs.

Vibrio may contaminate fish or shellfish.

Clostridium botulinum may contaminate improperly canned foods and smoked and salted fish.

Viruses-Viruses are present in the stools or vomitus of people who are infected. People who are infected with a virus may contaminate food and drinks, especially if they do not wash their hands thoroughly after using the toilette.

WEBER SRI LANKA - 2013

Contents

Page

1. <i>Leading Article –Foodborne Illnesses</i>	1
2. <i>Surveillance of vaccine preventable diseases & AFP (23rd – 29th Nove 2013)</i>	3
3. <i>Summary of newly introduced notifiable diseases (23rd – 29th Nove 2013)</i>	3
4. <i>Summary of selected notifiable diseases reported (23rd – 29th Nove 2013)</i>	4

Common sources of foodborne viruses include

- food prepared by a person infected with a virus
- shellfish from contaminated water
- produce irrigated with contaminated water

Common foodborne viruses include

- norovirus, which causes inflammation of the stomach and intestines
- hepatitis A, which causes inflammation of the liver

Parasites-Cryptosporidium parvum and Giardia intestinalis spread through water contaminated with the stools of people or animals who are infected. Foods that come into contact with contaminated water during growth or preparation can become contaminated with these parasites. Food preparers who are infected with these parasites can also contaminate foods if they do not thoroughly wash their hands after using the toilette and before handling food.

Trichinella spiralis is a type of roundworm parasite. People may be infected with this parasite by consuming raw or under-cooked pork or wild game.

Chemicals

- Harmful chemicals that cause illness may contaminate foods such as fish or shellfish, which may feed on algae that produce toxins, leading to high concentrations of toxins in their bodies.
- Certain types of wild mushrooms.
- Unwashed fruits and vegetables that contain high concentrations of pesticides.

Symptoms

Symptoms of foodborne illnesses depend on the cause. Common symptoms of many foodborne illnesses include

- vomiting
- diarrhea or bloody diarrhea
- abdominal pain
- fever
- chills

Symptoms can range from mild to serious and can last from a few hours to several days. C. botulinum and some chemicals affect the nervous system, causing symptoms such as

- headache
- tingling or numbness of the skin
- blurred vision
- weakness
- dizziness
- Paralysis

Complications

Foodborne illnesses may lead to dehydration, hemolytic uremic syndrome (HUS) and other complications. Acute foodborne illnesses may also lead to chronic—or long lasting—health problems.

Dehydration-When the affected person does not drink enough fluids to replace those that are lost through vomiting and diar-

rhoea, dehydration can result. When dehydrated, the body lacks enough fluid and electrolytes—minerals in salts, including sodium, potassium, and chloride—to function properly. Infants, children, older adults, and people with weak immune systems have the greatest risk of becoming dehydrated.

Signs of dehydration are

- excessive thirst
- infrequent urination
- dark-colored urine
- lethargy, dizziness, or faintness
- Signs of dehydration in infants and young children are
- dry mouth and tongue
- lack of tears when crying
- no wet diapers for 3 hours or more
- high fever
- unusually cranky or drowsy behaviour
- sunken eyes, cheeks, or soft spot in the skull

Also, when people are dehydrated, their skin does not flatten back to normal right away after being gently pinched and released.

Severe dehydration may require intravenous fluids and hospitalization. Untreated severe dehydration can cause serious health problems such as organ damage, shock, or coma—a sleeplike state in which a person is not conscious.

HUS

Hemolytic uremic syndrome is a rare disease that mostly affects children younger than 10 years of age. HUS develops when E. coli bacteria lodged in the digestive tract make toxins that enter the bloodstream. The toxins start to destroy red blood cells, which help the blood to clot and lining of the blood vessels.

Symptoms of HUS may include irritability, pallor and decreased urination. HUS may lead to acute renal failure. It may also affect other organs and the central nervous system. Most people who develop HUS recover with treatment.

Studies have shown that some children who recover from HUS develop chronic complications, including kidney problems, high blood pressure, and diabetes

HUS may lead to acute renal failure, which is a sudden and temporary loss of kidney function. HUS may also affect other organs and the central nervous system.

Other Complications

Other rare complications include paralysis of respiratory muscles, spontaneous abortions or stillbirths in pregnant women, reactive arthritis, Guillain-Barré syndrome etc.

Source-Foodborne Illnesses-available from <http://digestive.niddk.nih.gov/ddiseases/pubs/bacteria/>

Compiled by Dr. Madhava Gunasekera of the Epidemiology Unit

Table 4: Selected notifiable diseases reported by Medical Officers of Health 23rd - 29th Nove 2013 (48th 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**	T*	C**	
Colombo	215	9392	6	216	0	17	4	163	0	59	0	207	0	9	2	85	0	1	14	439	0	68	0	1	54	46			
Gampaha	110	3516	7	210	0	23	0	51	0	40	23	463	1	22	2	189	0	0	2	171	2	95	0	5	53	47			
Kalutara	36	1695	3	185	0	20	0	83	0	27	5	397	0	6	1	28	0	0	3	264	5	79	0	0	85	15			
Kandy	12	1658	3	163	0	12	1	30	0	14	3	77	1	100	2	123	0	0	7	148	1	18	0	5	74	26			
Matale	8	448	3	108	0	4	0	25	0	10	0	66	0	4	0	54	0	0	1	46	0	35	0	13	54	46			
NuwaraEliya	3	245	4	163	0	2	0	17	0	217	0	31	1	63	0	25	0	0	4	149	0	14	0	0	77	23			
Galle	10	823	1	125	0	19	0	7	0	89	7	222	0	66	0	16	0	2	8	320	0	47	0	2	68	32			
Hambantota	4	319	2	64	0	3	0	16	0	38	1	170	0	64	1	92	0	0	0	99	0	53	1	329	50				
Matara	3	449	3	92	0	15	0	29	0	29	5	159	4	94	3	150	0	2	4	258	0	84	2	100	82	18			
Jaffna	12	677	11	431	0	10	4	323	0	114	0	9	2	352	0	17	0	1	0	147	0	57	0	0	10	0			
Kilinochchi	0	61	0	43	0	0	0	15	0	5	0	9	0	16	0	0	0	2	0	2	0	7	0	12	50	50			
Mannar	0	68	0	75	0	3	1	69	0	36	0	15	0	20	0	2	0	0	0	12	0	6	0	4	40	60			
Vavuniya	1	76	2	70	0	13	0	14	0	20	0	51	0	3	0	4	0	2	1	23	1	35	1	16	10	0			
Mullaitivu	1	121	4	29	0	2	0	10	3	46	0	38	0	7	0	2	0	2	0	8	1	7	0	15	40	60			
Batticaloa	3	526	6	366	0	5	0	11	0	73	1	34	0	2	0	15	0	3	1	46	0	8	0	0	64	36			
Ampara	3	201	5	192	0	1	0	5	0	12	1	39	0	1	0	10	0	0	11	101	1	19	0	3	57	43			
Trincomalee	1	192	2	73	0	3	0	6	0	3	0	60	0	15	0	4	0	1	0	41	0	4	0	30	50	50			
Kurunegala	27	2643	7	214	0	43	0	42	0	26	14	371	3	50	1	63	0	1	2	356	1	102	1	59	78	22			
Puttalam	7	869	0	77	0	7	0	17	0	36	0	44	0	14	0	7	1	2	1	88	0	35	0	11	54	46			
Anuradhapura	3	501	3	109	0	17	0	3	0	70	1	314	0	25	0	27	0	2	2	171	1	99	3	415	42	58			
Polonnaruwa	3	460	3	92	0	3	0	14	2	72	3	171	0	3	0	36	0	2	6	142	1	23	1	165	57	43			
Badulla	4	504	0	206	0	5	0	22	0	12	0	60	1	90	0	46	0	1	1	134	0	73	0	7	59	41			
Monaragala	1	254	0	121	0	6	1	26	1	38	0	201	1	64	2	187	0	2	7	63	0	26	0	10	64	36			
Rathapura	10	1667	1	387	0	84	0	41	0	20	4	382	1	74	9	561	0	1	2	196	3	86	0	13	67	33			
Kegalle	20	1143	8	138	0	17	1	33	0	11	8	290	0	74	2	241	0	0	6	333	0	110	0	2	10	0			
Kalmune	1	501	5	173	1	3	0	6	0	130	0	11	0	3	0	5	0	0	2	98	0	12	0	1	62	38			
SRILANKA	498	29009	89	4122	1	337	12	1078	6	1247	76	3891	15	1241	25	1989	1	27	85	3855	17	1202	9	1218	66	34			

Source: Weekly Returns of Communicable Diseases (WRCD).

*T=Timeliness refers to returns received on or before 23rd November, 2013 Total number of reporting units 337 Number of reporting units data provided for the current week: 222 C**=Completeness
A = Cases reported during the current week. B = Cumulative cases for the year.

Table 1: Vaccine-Preventable Diseases & AFP

23rd - 29th Nove 2013 (48th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2013	Number of cases during same week in 2012	Total number of cases to date in 2013	Total number of cases to date in 2012	Difference between the number of cases to date in 2013 & 2012
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	01	01	01	00	01	00	00	00	00	03	01	97	72	+34.7%
Diphtheria	00	00	00	00	00	00	00	00	00	-	-	03	-	-
Mumps	05	02	03	00	01	00	00	02	02	15	19	1416	4137	-65.6%
Measles	17	02	04	00	02	00	01	00	18	44	02	3760	63	+5868.3%
Rubella	00	00	00	00	00	00	00	00	00	00	-	27	-	-
CRS**	00	00	00	00	00	00	00	00	00	-	-	-	-	-
Tetanus	00	00	00	00	00	00	00	00	00	00	00	23	12	+91.7%
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	-	-	-	-	-
Japanese Encephalitis	00	00	00	00	00	00	00	00	00	00	-	68	-	-
Whooping Cough	00	00	00	00	00	00	00	00	00	00	01	82	96	-14.6%
Tuberculosis	96	01	11	01	10	00	10	00	02	132	86	7648	7998	-4.4%

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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