

## Current major event

### Enterohaemorrhagic *E. coli* outbreak in Germany

As of 10 June 2011, the German health authorities have reported 2374 cases of Enterohaemorrhagic *Escherichia coli* (EHEC) and 773 cases of Haemolytic Uraemic Syndrome (HUS). There were 22 and 12 related deaths respectively. The outbreak has since spread to 13 other countries in Europe with a total of 66 EHEC cases and 36 HUS cases with one death reported. Three HUS cases linked to this outbreak were reported from the United States. The source of infection for this outbreak is now believed to originate from contaminated bean sprout from a farm in Germany. The outbreak started in early May.

### Editorial note

*Escherichia coli* (*E. coli*) is a bacterium that is commonly found in the gut of humans and warm-blooded animals. Most strains of *E. coli* are harmless. Enterohaemorrhagic *E. coli* (EHEC), a strain of *E. coli* can cause severe food-borne disease. It is transmitted to humans primarily through consumption of contaminated foods. Its significance as a public health problem was recognized in 1982, following an outbreak in the United States of America. EHEC produces toxins, known as verotoxins or Shiga-like toxins because of their similarity to the toxins produced by *Shigella dysenteriae*. *E. coli* O157:H7 is the most important EHEC serotype in relation to public health; however, other serotypes have frequently been involved in sporadic cases and outbreaks.

Symptoms of the diseases caused by EHEC include abdominal cramps and diarrhoea that may in some cases progress to bloody diarrhoea (haemorrhagic colitis). Fever and vomiting may also occur. The incubation period can range from 3 to 8 days (median 3-4 days). Most patients recover within 10 days, but in a small proportion of patients (particularly young children and the elderly), the infection may lead to a life-

### Five Keys to Safer Food

- Keep clean;
- Separate raw and cooked food;
- Cook thoroughly so that at least the centre of the food reaches 70°C;
- Keep food at safe temperature
- Use safe water and raw materials.

threatening disease, such as haemolytic uraemic syndrome (HUS). HUS is a serious development that sometimes follows an *E. coli* infection, in which toxic metabolic products of the bacterium can cause kidney damage.

The incidence of EHEC infections varies by age group, with the highest incidence of reported cases occurring in children aged under 15 years. The percentage of EHEC infections which progress to HUS varies between sporadic cases (3%-7%) and those associated with outbreaks (20% or more). In epidemiological terms, there is generally a background of sporadic cases, with occasional outbreaks.

EHEC can grow in temperatures ranging from 7°C to 50°C, with an optimum temperature of 37°C. It is destroyed by thorough cooking of foods until all parts reach a temperature of 70°C or higher. The reservoir of this pathogen appears to be mainly cattle and other ruminants such as camels. It is transmitted to humans primarily through consumption of contaminated foods, such as raw or undercooked ground meat products and raw milk. Faecal contamination of water and other foods, as well as cross-contamination during food preparation (with beef and other meat products, contaminated surfaces and kitchen utensils), will also lead to infection. Examples of foods implicated in outbreaks of *E. coli* O157:H7 include undercooked hamburgers, dried cured salami, unpasteurized fresh-pressed apple cider, yogurt, cheese and milk. An increasing number of outbreaks are associated with the consumption of fruits and vegetables (sprouts, lettuce, coleslaw, salad) whereby contamination may be due to contact with faeces from domestic or wild animals at some stage during cultivation or handling.

Country	HUS		EHEC	
	Cases	Deaths	Cases	Deaths
Austria	1	0	3	0
Canada	0	0	1	0
Czech Republic	0	0	1	0
Denmark	8	0	12	0
France	0	0	2	0
Germany	773	22	2374	12
Greece	0	0	1	0
Luxembourg	0	0	2	0
Netherlands	4	0	4	0
Norway	0	0	1	0
Poland	2	0	1	0
Spain	1	0	1	0
Sweden	17	1	30	0
Switzerland	0	0	5	0
United Kingdom	3	0	3	0
United States of America	3	0	2	0
<b>Total</b>	<b>812</b>	<b>23</b>	<b>2443</b>	<b>12</b>

## Update on outbreaks

in the Eastern Mediterranean Region

**Measles** in Afghanistan; **A(H5N1)** in Egypt; **Cholera** in Afghanistan.

## Current public health events of international concern

[cumulative N° of cases (deaths), CFR %]

### Avian influenza

Egypt	[144 (48), <b>33.3%</b> ]
Indonesia	[178 (146), <b>82.0 %</b> ]
Viet Nam	[119(59), <b>49.6%</b> ]
China	[40(26), <b>65%</b> ]
Global total	[556 (325), <b>58.5%</b> ]

### HUS

Germany	[773(22) , <b>2.8%</b> ]
Europe	[36(1), <b>2.8%</b> ]
USA	[3(0), <b>0.0%</b> ]

### Ebola Haemorrhagic fever

Uganda	[1(1), 100%]
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### Meningococcal disease

Chad	[5536 (249), <b>4.4 %</b> ]
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CFR=Case-Fatality Rate; \* Number of hospital visits; # Suspected cases only