



Epidemiological Alert: Haemolytic Uraemic Syndrome (HUS) and infection by Enterohaemorrhagic *E. coli* (EHEC)

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The objective of this alert is to provide an update on cases of haemolytic uraemic syndrome (HUS) and on cases of infection by enterohaemorrhagic *E. coli* (EHEC) (or Shiga toxin-producing *E. coli* (STEC)) in Europe and countries of our Region. In addition, it is intended to reemphasize the Pan American Health Organization (PAHO) recommendations to Member States related to this theme.

Current Situation

Haemolytic uraemic syndrome (HUS)

As of 8 June 2011, a total of 722 cases of HUS, including 19 fatalities, have been reported from European Union Member States. This total includes 689 HUS cases and 18 fatalities in Germany alone (with 47 cases and three deaths reported in the past day).

The majority of HUS cases in Germany are adults aged 20 years or older (87%) and 69% of them are women.

Enterohemorrhagic *Escherichia coli* (EHEC) (or Shiga toxin-producing *E. coli* (STEC))

As of 8 June, a total of 2,021 non-HUS STEC cases including 6 fatalities, have been reported from EU Member States; 1,959 cases of these cases are in Germany, including the 6 fatalities and the 276 new cases reported in the past day. One additional suspected STEC death reported yesterday remains unconfirmed.

Of the cases, 60% were female and 88% were adults aged 20 years or older. Case onset dates ranged from 1 May to 4 June.

According to the Robert Koch Institute, in Germany, the numbers of HUS and non-HUS STEC cases are currently decreasing.

New Case Definition

Starting 8 June 2011, European Union (EU) Member States are reporting case according to a new case-definition.

Possible Epidemic Case: Any person who developed in or after 1 May 2011;

-STEC diarrhea defined as acute onset of diarrhea or bloody diarrhea **AND** at least one of the following criteria:

1. Isolation of an *E. coli* strain that produces Shiga toxin 2 (Stx2) or stx2 gene.
2. Direct detection of stx2 gene nucleic acid in feces without strain isolation.

-STEC HUS defined as hemolytic uremic syndrome (HUS) defined as acute renal failure and at least one of the following clinical criteria

1. Microangiopathic hemolytic anemia
2. Thrombocytopenia

Probable Epidemic Case

Any possible epidemic case of STEC diarrhea or STEC HUS **AND** during the exposure period of 14 days before the onset of illness, meeting at least one of the following epidemiological criteria:

- Stay in Germany or any other country where a confirmed case has probably acquired infection;
- Consumption of food product obtained from Germany;
- Close contact (e.g., in a household) with a confirmed epidemic case.

Confirmed Epidemic Case

Any person meeting the criteria for a possible case, **AND** Isolation of a STEC strain of serotype O104:H4

OR isolation of a STEC strain of serotype O104 **AND** fulfilling epidemiological criteria for a probable case.

EU Member States are reporting number of probable and confirmed cases and deaths.

The source of the outbreak is under investigation, but contaminated food seems to be the most likely vehicle of infection.

Most cases are from, or have a history of travel to Germany during the incubation period for infection, typically 3–4 days after exposure (range: 2–10 days). Within the EU cases have been reported from Austria, Czech Republic, Denmark, Finland, France, Luxembourg, the Netherlands, Norway, Poland, Spain, Sweden, and the United Kingdom.

In the Americas Region

The United States Center for Disease Control and Prevention (CDC) reported that as of 7 June 2011, in the US there has been one confirmed case and three suspected cases of STEC O104: H4 in persons with recent prior travel to Hamburg, Germany, where they were probably infected. Two of the three suspected cases are HUS.

Likewise, the Canada Public Health Agency reported on 7 June 2011 that a suspected case of STEC O104 was detected in a resident of Canada with recent prior travel to the north of Germany.¹

Recommendations

The World Health Organization is not making any new recommendations for the treatment of cases related to this outbreak in particular.²

Normal hygiene measures should be observed. Hand washing after toilet use and before touching food, are highly recommended, as the bacterium can be passed from person to person, as well as through food, water and direct contact with animals. The bacteria is destroyed by thorough cooking of foods until all parts reach a temperature of 70 °C or higher.

Anyone who has developed bloody diarrhoea and abdominal pain and who has recently had contact with northern Germany should seek medical advice urgently. HUS complications can cause acute kidney failure and which may develop after the diarrhoea has resolved.

Travel and international trade

The World Health Organization does not recommend any restrictions in travel to or trade related to this outbreak.

¹ Canada currently uses the following definition to identify suspect cases of STEC O104 associated with Germany outbreak: Temporary stay in Germany any time in the 10 days prior to illness onset; AND Symptom onset on or after May 1, 2011 AND: Either: - Clinical diagnosis of hemolytic uremic syndrome (HUS) OR - Laboratory detection of Shiga-toxin 2 (Stx2) in stool.

² <http://www.euro.who.int/en/what-we-do/health-topics/emergencies/international-health-regulations/news2/news/2011/06/ehc-outbreak-rare-strain-of-e.-coli-unknown-in-previous-outbreaks>

Technical information

Daily updates respecting the number of Haemolytic uraemic syndrome (HUS) cases care published on the following websites:

- **WHO Europe:** <http://www.euro.who.int/en/what-we-do/health-topics/emergencies/international-health-regulations/news/news/2011/06/ehec-outbreak-update-10>
- **WHO:** <http://www.who.int/csr/don/en/index.html>
- **CDC:** <http://www.cdc.gov/>

Laboratory Protocols

WHO Global Salm Surv. Manual of Diagnostic Procedures and characteristics of Escherichia coli O157 producer of the Shigatoxin based on clinical specimens starting in 2007. The guide is available in Spanish via the following link: <http://fos.panalimentos.org/gfn/ManualesdeProcedimiento/tabid/783/language/es-ES/Default.aspx>

The standard laboratory protocols for molecular subtyping of the pathogens under surveillance by PulseNet laboratories. Available via the following link: http://www.pulsenetinternational.org/SiteCollectionDocuments/pfge/5%201_5%202_5%204_PNetStand_Ecoli_with_Sflexneri.pdf