EXECUTIVE SCIENCE UPDATE
Quarterly newsletter for Policymakers
Edition 05: December 2008
For more information contact ECDC at info@ecdc.europa.eu or see our website at ecdc.europa.eu

Q fever: An under-recognised disease that can cause outbreaks

Key facts

- Q fever is a human disease transmitted from farm animals such as cattle, sheep and goats.
- An upsurge of cases in the Netherlands this year demonstrates that Q fever has the potential to cause outbreaks.
- Actions taken by the Dutch public health authorities ensured health experts in neighbouring countries and across the EU were made aware of the outbreak.
- Vigilance against Q fever may need to be reinforced in the EU. Mild Q fever may often go undiagnosed, and therefore unreported. Healthcare workers need to keep in mind the possibility of this infection.

Q fever is caused by bacteria found in a wide range of wild and domestic animals. Infection in humans, however, is most commonly linked to infected cattle, sheep and goats. (The strange name of the disease comes from 'query', because when the disease was first described when its cause was unknown.) Though the number of cases of Q fever reported in EU countries has decreased over the past 10 years, large outbreaks can still occur.

How serious a disease is Q fever?

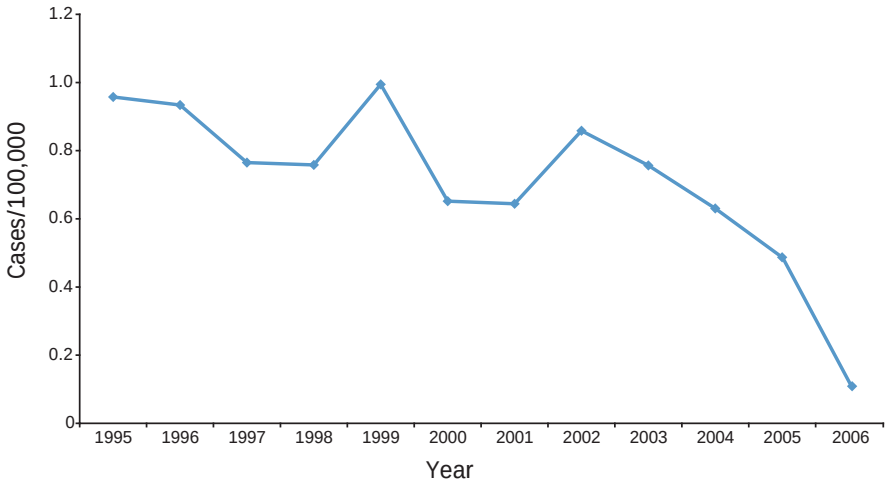
Q fever usually appears as a flu-like illness, but may cause severe liver failure, pneumonia, respiratory distress and, in pregnant women, miscarriages. In general, most patients will return to good health within a few months without any treatment, but an estimated 1–2% of people with acute Q fever die of the disease.

The most common causes of Q fever in humans appear to be ingestion of contaminated food such as unpasteurised milk or cheese, or close contact with infected animals, particularly when these give birth. Dust containing infectious material can also spread quite far with the wind. People who work with farm animals are therefore one of the key risk groups.

Upsurge of Q fever in the Netherlands

The upsurge of cases of Q fever in the Netherlands this year demonstrates the necessity of continuing to monitor this disease. With 677 cases of Q fever confirmed in the period January to July 2008, the current outbreak in the Netherlands exceeds the overall number of cases reported EU-wide in 2006 (583 cases). The outbreak, which now appears to have peaked, centred on rural areas in the south of the Netherlands where there is intensive dairy farming of goats. One possible theory for the high number may be that health professionals in the area became more aware of the disease after a smaller Q fever outbreak in 2007, and thus were more likely to diagnose cases.

Figure 1
Incidence rate of Q fever cases in EU and EEA/EFTA countries by year reported, 1995-2004.



Source: Eurostat. Data missing from Liechtenstein. Q fever is not a notifiable disease in Austria. Q fever was not notifiable in Ireland prior to 2004.

EU-level sharing of knowledge

In July 2008 the Netherlands' National Institute for Health and the Environment (RIVM) organised a meeting to share knowledge about the Q fever outbreak in the Netherlands with neighbouring countries, ECDC and WHO. Experts from RIVM published an article about the outbreak in the scientific journal *Eurosurveillance*.

Vigilance against Q fever may need to be reinforced in the EU, given its potential to cause outbreaks. Mild Q fever can often go undiagnosed, and therefore unreported. Healthcare workers need to keep this infection possibility in their minds.

For more information, please see:
- *Eurosurveillance* article 'Large ongoing Q fever outbreak in the south of The Netherlands, 2008' available at www.eurosurveillance.org

ECDC publishes this bulletin to enhance public access to information about its scientific and technical work. Our goal is to publish accurate information. If errors are brought to our attention, we will try to correct them. However, the ECDC accepts no responsibility or liability whatsoever with regard to the information published in this bulletin. *Editor-in-chief: Prof. Johan Giesecke. ISSN: 1830-9852*

TQ-AG-08-004-EN-C

Recent developments in vCJD highlight remaining uncertainties about this disease

Key facts

- Variant CJD is a rare neurological disease in humans, linked to the so called 'mad cow' disease.
- Recent cases of vCJD in Europe highlight remaining uncertainties and may call for re-examination of some aspects of preventive measures in the EU.
- Since 1989, efficient control and prevention measures have been implemented in the EU to limit the probability of food contamination. The key piece of legislation (Regulation EC No 999/2001) was adopted on 22 May 2001.

Recent cases in Europe of variant Creutzfeldt-Jakob disease (vCJD) highlight the uncertainties remaining about the disease and may call for re-examination of some aspects of preventive measures in the EU. Variant CJD is a rare but fatal human neurological disease classified as a transmissible spongiform encephalopathy (TSE), linked to the so called 'mad cow' disease – bovinespongiform encephalopathy (BSE). No vaccine or curative treatment is available. Most cases appear to have been infected through consumption of cattle products contaminated with the agent of BSE (a so-called 'prion').

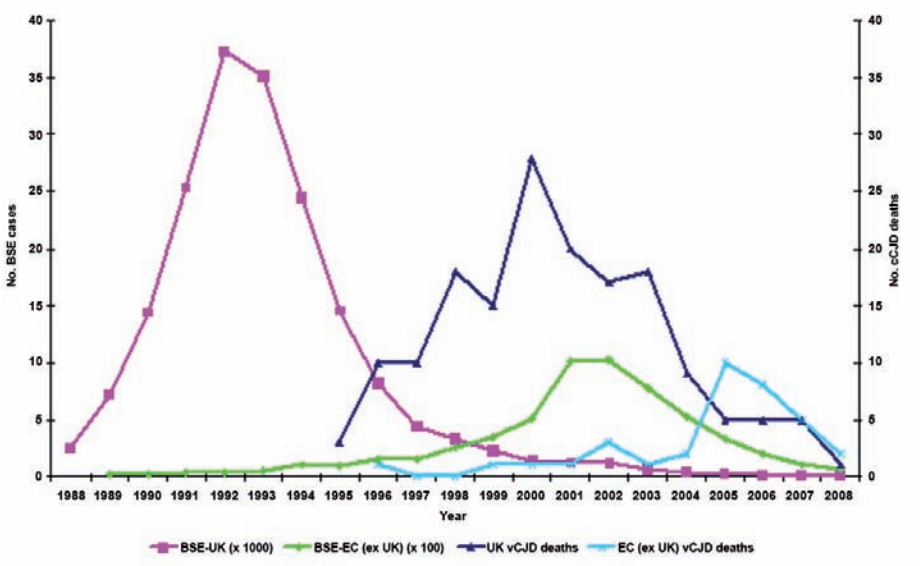
Figure 1

Worldwide total number of cases, as of August 2008. Source: EuroCJD[1]

Country	Total number primary cases (Number alive)	Total number secondary cases: blood transfusion (Number alive)	Cumulative residence in UK >6 months during period 1980–96
UK	164 (3)	3 (0)	167
France	23 (0)	-	1
Ireland	4 (0)	-	2
Italy	1 (0)	-	
USA	3† (0)	-	2
Canada	1 (0)	-	1
Saudi Arabia	1 (1)	-	0
Japan	1* (0)	-	0
Netherlands	2 (0)	-	0
Portugal	2 (1)	-	0
Spain	4 (0)	-	0

Figure 2

Worldwide total number of cases, as of August 2008. Source: EuroCJD1



For the first time ever, in Spain two cases of vCJD have been identified in the same family. This could suggest that there may be an increased risk for vCJD in family members of a case through common dietary exposure.

In Portugal, a second case in a very young person occurred in the same region where another such case was detected, probably by being exposed to the same contaminated food very early in life. As the incubation period is estimated to be long – around 10 years – and young individuals seem to be more vulnerable, it is possible that more cases appear in the region. Enhanced surveillance has been recommended.

The identification in the UK of three cases of vCJD related to receipt of blood from a donor who later developed the disease highlights a potential risk for transmission via blood transfusion or contaminated surgical instruments. EU directives are in place to limit these risks.

In 2000, the epidemic of vCJD peaked in the UK, declining progressively with only one death in 2008 (as of 1 September 2008, see figure). As of August 2008, a total of 209 cases of vCJD cases have been identified from 11 countries (see table). Since 2001, efficient control and prevention measures have been implemented in the EU to ensure the safety of the food chain.

† The third US patient with vCJD was born and raised in Saudi Arabia and has lived permanently in the United States since late 2005. According to the US case report, the patient was most likely infected as a child while living in Saudi Arabia.

* The case from Japan had resided in the UK for 24 days in the period 1980-1996.

- No case reported

[1] European and Allied Countries Study Group of CJD, www.eurocjd.ed.ac.uk.

For more information please see:

- ECDC website at www.ecdc.europa.eu/en/Health_topics/vCJD/