

Q FEVER 2006-2007

No. 3, 2009

Q fever is a zoonosis caused by the *Coxiella burnetii* bacterium. In 2005 the number of diagnosed *C. burnetii* positive livestock farms increased, causing an increased number of serological tests in humans, EPI-NEWS 51/07. A total of 1,613 persons were tested for Q fever: 167 in 2006 and 1446 in 2007. The indication for these tests and the occurrence of clinical symptoms in persons with serological signs of Q fever were not known. To obtain this, a questionnaire was sent to physicians who had submitted a test in the period 1 January 2006 – 7 December 2007 from a person who had antibodies compatible with acute or previous infection or whose test results were inconclusive.

Persons tested for Q fever

The majority of the 1,613 persons tested were from Jutland. The regional distribution was as follows: 23% from Region North Jutland, 31% from Central Jutland, 32% from South Denmark 5% from Zealand, and 10% from the Capital Region. The mean age was 40 years, and 61% were males. In 37 (2%) the serological results were compatible with acute infection and in 140 (9%) results were compatible with previous infection. Results were inconclusive in 180 (11%) cases. Guidance and interpretation of the results at: www.ssi.dk (Danish language).

Questionnaire survey

Questionnaires were sent to 323 persons of whom 247 (76%) returned the questionnaire. The majority were farmers (43%) or veterinarians (39%); 5% lived at a farm and 1% worked at a farm. A total of 77% of the farmers and 56% of the veterinarians were males. A total of 31% were tested because they presented with symptoms compatible with Q fever after exposure to *C. burnetii*; 64% (157) were asymptomatic and were tested following relevant *C. burnetii* exposure. Veterinarians were tested more frequently than farmers on the basis of *C. burnetii* exposure alone; 79% and 55%, respectively. Fever of unknown cause was among the other indications for Q fever testing (2%). Symptoms were unspecific and comparable in persons with acute and previous infection, [Table 1](#). Five cases with acute infection and five cases of previous infection were

Table 1. Symptoms in persons with acute or previous infection who have returned the questionnaire

	Acute (N=27)		Previous (N=100)	
	No.	(%)	No.	(%)
Fatigue	6	(22)	21	(21)
Muscular pain	5	(19)	21	(21)
Headache	5	(19)	9	(9)
Fever >38° C	4	(15)	17	(17)
Cough	3	(11)	10	(10)
Pneumonia	1	(4)	2	(2)
Liver symptoms	0	(0)	1	(1)
Other symptoms	5	(19)	12	(12)

admitted to hospital.

Nearly all the tested cases (92%) had been exposed to cattle livestock. A total of 18% were exposed to sheep, 13% to goats and 63% to animals in labour; 28% had ingested raw milk. Exposure and occupation were equally distributed among persons with acute or previous infection and inconclusive test results, and were independent of symptoms. According to the physicians who answered the questionnaire, 109 (44%) had been exposed to animals that had tested positive to *C. burnetii*.

Pregnant women and other risk groups

Four pregnant women - all veterinarians - had antibodies compatible with acute infection, but were asymptomatic. Another three pregnant women (a veterinarian, a farmer and one of unknown occupation) had previously been infected. One immunosuppressed person had a symptomatic acute infection.

Commentary

A total of 11% of the tested persons in 2006-2007 had serological signs of acute or previous *C. burnetii* infection. The majority of the persons with serological signs of Q fever were tested due to occupational exposure to livestock. It is therefore estimated that the proportion of persons with serological signs of acute or previous *C. burnetii* infection in the Danish population is lower than 11%. Most persons with serological signs of Q fever were asymptomatic, and the survey supports the assumption that Q fever in Denmark is - in the majority of cases - a mild and self-limiting infection, EPI-NEWS 46/06. In this context novel recommendations for Q fever testing were intro-

duced towards the end of 2007, EPI-NEWS 51/07.

The recommendations stress that testing of healthy, non-pregnant women on the basis of possible infection exposure alone is not indicated. Possibly as a consequence of the recommendations, a minor decrease has been observed in the number of Q fever tested persons in 2008. The reported symptoms were unspecific and may be seen in other, more frequently occurring infectious diseases. This may explain the lack of difference between the symptoms observed in persons with serological signs of acute infection and in those with previous infection.

However, Q fever can be a severe disease and should be considered a differential diagnosis in unexplained abortions, intrauterine growth retardation, atypical pneumonia, hepatitis, and culture-negative endocarditis, particularly in cases with relevant exposure to *C. burnetii* and in risk groups, EPI-NEWS 51/07.

Pregnant women comprise a special risk group and in the years to come the proportion of women with occupational exposure to livestock is expected to increase. Studies aiming to describe the importance of acute or previous Q fever in pregnant women are currently ongoing.

In recent years, outbreaks have been described in England, Germany and Holland in connection with the production of sheep and goats, primarily in the labour period. Such outbreaks have not been described in Denmark. It is estimated that Q fever does not currently comprise a threat to public health in Denmark, but developments are monitored closely. (S. Bacci, P. Valentiner-Branth, K. Mølbak, Dept. of Epidemiology, S. Villumsen, K.A. Kroghfelt, DBMP)

INFECTION PREPAREDNESS REPORT 2007

The Infection Preparedness Report covering 2007 was recently released by Statens Serum Institut. The primary focus of the report is on six thematic areas, including *Clostridium difficile* 027 and ESBL-producing bacteria resistant to some types of antibiotics. The status report, furthermore, provides an overview of other 2007 surveillance findings. The report is available at www.ssi.dk (Danish language). (Department of Epidemiology)

14 January 2009

Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2009 figures are preliminary)

Table 1	Week 2 2009	Cum. 2009 ¹⁾	Cum. 2008 ¹⁾
AIDS	0	0	2
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob	0	2	13
Diphtheria	0	0	0
Food-borne diseases	11	12	9
of these, infected abroad	2	2	2
Gonorrhoea	4	5	8
Haemorrhagic fever	0	0	0
Hepatitis A	0	0	3
of these, infected abroad	0	0	1
Hepatitis B (acute)	1	1	0
Hepatitis B (chronic)	0	0	5
Hepatitis C (acute)	0	0	0
Hepatitis C (chronic)	4	4	4
HIV	4	4	8
Legionella pneumonia	3	4	4
of these, infected abroad	0	0	1
Leprosy	0	0	0
Leptospirosis	0	0	0
Measles	2	2	0
Meningococcal disease	0	0	4
of these, group B	0	0	0
of these, group C	0	0	1
of these, unspec. + other	0	0	3
Mumps	0	0	0
Neuroborreliosis	0	0	4
Ornithosis	0	0	0
Pertussis (children < 2 years)	4	4	3
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	1	1	0
Listeria monocytogenes	0	0	0
Streptococcus pneumoniae	0	0	5
Other aethiology	0	0	2
Unknown aethiology	0	0	3
Under registration	8	9	-
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	5	6	3
of these, infected abroad	0	1	2
Syphilis	4	5	6
Tetanus	0	0	0
Tuberculosis	7	8	11
Typhoid/paratyphoid fever	0	0	1
of these, infected abroad	0	0	1
Typhus exanthematicus	0	0	0
VTEC/HUS	0	1	5
of these, infected abroad	0	0	1

¹⁾ Cumulative number 2009 and in corresponding period 2008

Selected laboratory diagnosed infections

Number of specimens, isolates, and/or notifications received in SSI laboratories

Table 2	Week 2 2009	Cum. 2009 ²⁾	Cum. 2008 ²⁾
Bordetella pertussis (all ages)	1	5	4
Gonococci	9	9	13
of these, females	1	1	2
of these, males	8	8	11
Listeria monocytogenes	2	2	0
Mycoplasma pneumoniae			
Resp. specimens ³⁾	1	5	2
Serum specimens ⁴⁾	1	3	7
Streptococci ⁵⁾			
Group A streptococci	15	15	7
Group B streptococci	3	3	5
Group C streptococci	1	1	1
Group G streptococci	5	5	8
S. pneumoniae	83	97	106
Table 3	Week 52 2008	Cum. 2008 ²⁾	Cum. 2007 ²⁾
MRSA	19	805	668
Pathogenic int. bacteria ⁶⁾			
Campylobacter	8	3439	3860
S. Enteritidis	2	636	566
S. Typhimurium	16	2003	341
Other zoon. salmonella	9	999	739
Yersinia enterocolitica	1	327	274
Verocytotoxin- producing E. coli	0	159	158
Enteropathogenic E. coli	0	231	185
Enterotoxigenic E. coli	0	408	308

²⁾ Cumulative number 2009 and in corresponding period 2008

³⁾ Resp. specimens with positive PCR

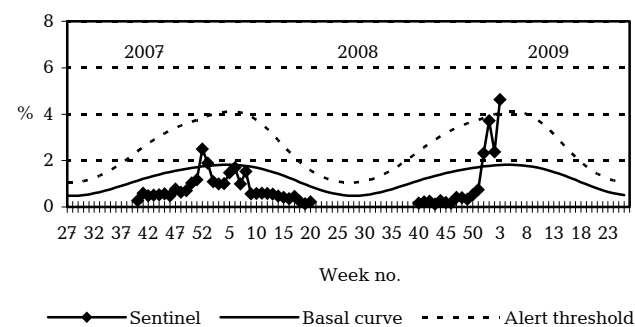
⁴⁾ Serum specimens with pos. complement fixation test

⁵⁾ Isolated in blood or spinal fluid

⁶⁾ See also www.germ.dk

Sentinel surveillance of the influenza activity

Weekly percentage of consultations, 2007/2008/2009



Sentinel: Influenza consultations (as percentage of total consultations)

Basal curve: Expected frequency of consultations under non-epidemic conditions

Alert threshold: Possible incipient epidemic

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