



## SALMONELLA OUTBREAK

Denmark is currently experiencing a number of salmonella outbreaks. The largest outbreak is caused by *Salmonella* Typhimurium phage type U292, EPI-NEWS 27-33/08. At present, 1,158 patients are registered and the outbreak remains active, but it is less intense than previously. The second largest outbreak is caused by *S. Typhimurium* phage type DT135 and includes 93 patients. Descriptive epidemiology indicates that the two outbreaks may be connected. Another outbreak of *S. Derby* comprises 52 patients, some with different subtypes. *S. Derby* is traditionally associated with swine. Finally, 31 patients have become infected with *S. Typhimurium* phage type U288. The U288 outbreak is considered resolved as the type was found repeatedly in fresh pork distributed in the patients' communities.

### Overall status

2008 has currently seen 3,400 registered salmonella cases; the corresponding figure at this date in 2007 was 1,511. For the first time since 1991, the *Typhimurium* serotype is more frequent than the *Enteritidis*. Currently, a total of 1,860 cases of *Typhimurium* have been registered in 2008 versus 315 in 2007. Furthermore, 2008 will be the first year after 1999 with more salmonella than campylobacter cases, EPI-NEWS 10/08.

### Commentary

The main hypothesis is that the increase in salmonella is caused by fresh pork or pork products. This hypothesis is based on the previous finding of the concerned salmonella types in swine farms and on specific findings of the outbreak types U288 and U292 in fresh pork. Furthermore, the interviewed patients seem to have a preference for pork meat. However, other hypotheses than swine production are considered. The outbreaks represent an extraordinary situation in a country which is otherwise well-known for its considerable efforts to limit salmonella occurrence. To maintain Danish food safety, it is essential to identify the factors causing this extraordinary situation. The efforts to resolve the outbreaks therefore continue. (Department of Epidemiology on behalf of the Joint Outbreak Group)

## MALARIA CASES IMPORTED FROM THE GAMBIA

As detailed in the daily press, eight malaria cases caused by *Plasmodium*

*falciparum* have recently been detected among Danish short-term charter tourists returning from The Gambia. Below, the cases are outlined in brief.

### Case 1

A 58-year-old male who had spent two weeks in The Gambia. He had taken no malaria prophylaxis and had stayed at one location for the duration of his stay. He was initially admitted to a local Danish hospital with CNS symptoms on suspicion of another condition. When he reported the stay in The Gambia he was tested for malaria. A 5.8% *P. falciparum* parasitaemia was detected. Subsequently, the patient was transferred to Skejby Hospital, where he is currently admitted.

### Cases 2 and 3

A 50-year-old woman (case 2) who had spent a week in The Gambia with a friend (case 3). They had taken no malaria prophylaxis and had stayed at one location for the duration of the stay. Upon returning to Denmark, case 2 presented with confusion and disorientation, but another eight days passed before an acquaintance called a GP who admitted the patient to an infectious diseases department. Malaria smear tested positive to *P. falciparum*, parasitaemia 2.2%. The patient has subsequently recovered fully and been discharged. Case 3 is a 49-year-old woman. The Police was contacted after case 2 was admitted and case 3 was then found dead in her home. Subsequent examination showed that she died with malaria.

### Case 4

A 57-year-old woman who had spent a week in The Gambia with a friend (case 5). She had taken no malaria prophylaxis and presented with fever 6-7 days after returning to Denmark. Malaria was initially excluded due to the incubation period. Two days later the patient was found in her home running a high fever and with a depressed level of consciousness. She was admitted to a local Danish hospital and then transferred to the Copenhagen University Hospital (CUH) where malaria smear showed 6% *P. falciparum* parasitaemia. Two days later she was transferred to intensive care and was mechanically ventilated. She was admitted for 10 days.

### Case 5

A 49-year-old woman initially admitted to a local Danish hospital at her own request following four days of malaise with diarrhoea followed by fever and headache. She had visited The Gambia with a friend (case 4)

without taking malaria prophylaxis. Symptom onset was approx. seven days after she had returned to Denmark. She was transferred to the CUH where *P. falciparum* malaria was detected with a parasitaemia of < 1%. The patient has since been discharged.

### Case 6

A 69-year-old man who had stayed one week in The Gambia without taking malaria prophylaxis. He was initially admitted to a local Danish hospital where *P. falciparum* was detected with a parasitaemia of 5%. He was transferred to the CUH and later discharged with no sequelae.

### Cases 7 and 8

Two brothers aged 48 and 49 years who had visited The Gambia for one week with no malaria prophylaxis. One of the brothers was diagnosed with malaria at a hospital department where he was admitted on suspicion of a CNS condition. He was transferred to Hvidovre Hospital where cerebral malaria was detected. Subsequently, his brother was admitted. They had parasitaemias of 5% and 3%, respectively; both have since been discharged.

## Commentary

The Gambia has been a destination for Danish short-time travellers for a number of years. The current cluster of malaria cases may be caused by a number of factors including changed travel behaviour and changes in local malaria transmission patterns. Several of the travellers had purchased inexpensive travels shortly before departure and had not sought guidance concerning the risk of infectious diseases such as malaria. Several of the patients have been severely ill with cerebral malaria and severe sequelae should be expected in some of the cases. Malaria-related deaths are rare in Denmark. It is essential to receive relevant prophylaxis also in connection with short stays in malaria areas, and the malaria diagnosis should always be excluded through pertinent testing and avoiding unnecessary delay. A number of other European countries have also reported an increase in malaria cases from The Gambia and unconfirmed information indicates that an increase in transmission rates may also be present among local inhabitants.

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## Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2008 figures are preliminary)

Table 1	Week 47 2008	Cum. 2008 <sup>1)</sup>	Cum. 2007 <sup>1)</sup>
AIDS	1	34	46
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	1	0
Creutzfeldt-Jakob	0	4	8
Diphtheria	0	0	0
Food-borne diseases	13	811	597
of these, infected abroad	0	132	112
Gonorrhoea	4	344	334
Haemorrhagic fever	0	0	0
Hepatitis A	1	47	24
of these, infected abroad	0	23	10
Hepatitis B (acute)	0	22	28
Hepatitis B (chronic)	3	160	293
Hepatitis C (acute)	0	6	8
Hepatitis C (chronic)	2	404	549
HIV	8	235	288
Legionella pneumonia	5	118	115
of these, infected abroad	0	41	32
Leprosy	0	0	0
Leptospirosis	1	7	12
Measles	0	10	2
Meningococcal disease	0	50	64
of these, group B	0	22	35
of these, group C	0	15	19
of these, unsp. + other	0	13	10
Mumps	1	27	9
Neuroborreliosis	1	55	94
Ornithosis	2	6	9
Pertussis (children < 2 years)	0	89	75
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	4	2
Listeria monocytogenes	0	1	10
Streptococcus pneumoniae	0	75	93
Other aethiology	0	19	11
Unknown aethiology	0	19	17
Under registration	5	12	-
Rabies	0	0	0
Rubella (congenital)	0	2	0
Rubella (during pregnancy)	0	0	0
Shigellosis	3	79	211
of these, infected abroad	0	60	48
Syphilis	3	128	93
Tetanus	0	1	2
Tuberculosis	8	361	366
Typhoid/paratyphoid fever	0	32	21
of these, infected abroad	0	26	20
Typhus exanthematicus	0	0	2
VTEC/HUS	2	141	150
of these, infected abroad	0	48	50

<sup>1)</sup> Cumulative number 2008 and in corresponding period 2007

## Selected laboratory diagnosed infections

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

Table 2	Week 47 2008	Cum. 2008 <sup>2)</sup>	Cum. 2007 <sup>2)</sup>
Bordetella pertussis (all ages)	6	182	198
Gonococci	5	340	324
of these, females	1	70	56
of these, males	4	270	268
Listeria monocytogenes	0	45	52
Mycoplasma pneumoniae			
Resp. specimens <sup>3)</sup>	3	78	347
Serum specimens <sup>4)</sup>	4	84	390
Streptococci <sup>5)</sup>			
Group A streptococci	2	127	102
Group B streptococci	4	120	92
Group C streptococci	0	21	20
Group G streptococci	3	119	113
S. pneumoniae	17	842	952
Table 3	Week 45 2008	Cum. 2008 <sup>2)</sup>	Cum. 2007 <sup>2)</sup>
MRSA	35	692	605
Pathogenic int. bacteria <sup>6)</sup>			
Campylobacter	55	3166	3706
S. Enteritidis	12	604	528
S. Typhimurium	27	1860	315
Other zoon. salmonella	11	926	668
Yersinia enterocolitica			
Verocytotoxin-producing E. coli	6	299	251
Enteropathogenic E. coli	4	146	145
Enterotoxigenic E. coli	17	207	164
Enterotoxigenic E. coli	6	376	283

<sup>2)</sup> Cumulative number 2008 and in corresponding period 2007

<sup>3)</sup> Resp. specimens with positive PCR

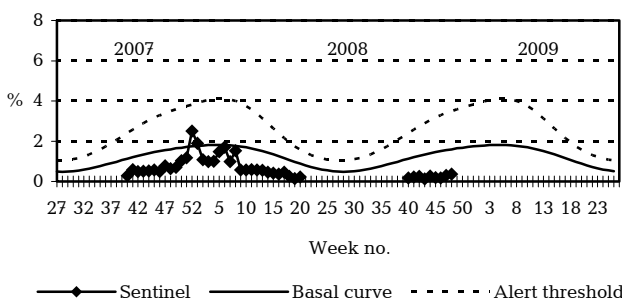
<sup>4)</sup> Serum specimens with pos. complement fixation test

<sup>5)</sup> Isolated in blood or spinal fluid

<sup>6)</sup> See also [www.germ.dk](http://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