EPI-NEWS

NATIONAL SURVEILLANCE OF COMMUNICABLE DISEASES

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CLOSTRIDIUM DIFFICILE

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Clostridium difficile is an anaerobic spore-forming and generally apathogenic bacterium. However, some strains may cause diarrhoea due to formation of toxins. Symptomatic infection is primarily linked with hospital admission and antibiotic treatment, and symptoms range from mild diarrhoea to serious manifestations such as pseudomembranous colitis, toxic megacolon or perforation of the colon. Approx. 20% of patients with symptomatic infection relapse within two months. The incidence of C. difficile is assisted by e.g. the use of antibiotics. Furthermore, C. difficile challenges hygiene standards as it is spore-forming. The risk of infection rises with increasing age, underlying disease and immunodeficiency.

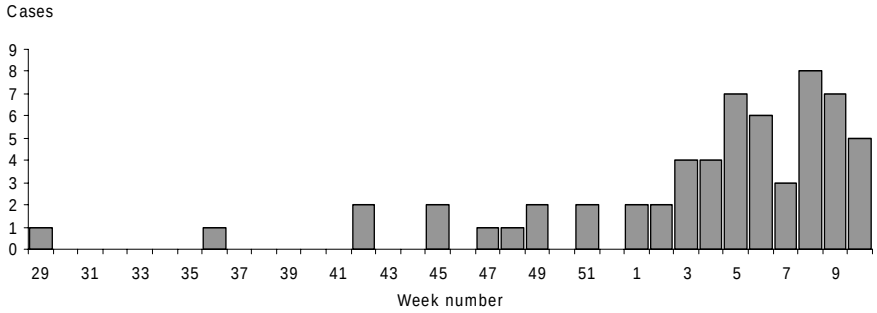
Clostridium difficile ribotype 027

In recent years, a particularly virulent strain, ribotype 027 (CD027), has emerged in a number of countries, particularly in connection with hospital outbreaks, but also in community-acquired diarrhoea cases. The risk of serious disease and death associated with CD027 exceeds that of other C. difficile strains. CD027 is – among others – characterised by an increased production of toxins A and B, production of a binary toxin and resistance to newer fluoroquinolones such as Moxifloxacin.
The first Danish cases of CD027 were described in 2006-2007, EPI-NEWS 26/07.

Outbreak in North Zealand

The previous months have seen an increase in CD027 cases in several Zealand hospitals, particularly in the former Frederiksborg County.
From week 29, 2008 to week 10, 2009, a total of 60 cases were recorded. On the basis of resistance and toxin production these were probably CD027 cases, Figure 1.
SSI has ribotyped C. difficile from 47 cases, all were CD027. A total of 32 (54%) were females and the median age was 81 years. During the two months leading up to the diagnosis 54 (92%) had been admitted at least once and 55 (93%) had, according to their medical record, received antibiotics (information was not collected from GPs). Diarrhoea with no concurrent symptoms was reported by 32 (53%), while the remaining cases had serious manifestations such as clinical sepsis and pseudomembranous colitis. In eight cases, C. difficile may have been a contributory cause of death.

Figure 1. C. Difficile cases per week, presumably of ribotype 027, by laboratory sample reception date



Intensified surveillance of CD027

The Danish National Board of Health has decided to intensify the monitoring of CD027 and has sent information to that effect to the clinical microbiology departments. Increased attention should be given to possible cases of nosocomial diarrhoea, particularly after antibiotic treatment.
The clinical microbiology departments are required to submit Moxifloxacin-resistant isolates from cases with severe manifestations and on suspicion of an outbreak.
(G. St-Martin, S. Bacci, K. Mølbak, Dept. of Epidemiology, K.E.P. Olsen, DBMP, B. Olesen, B. Bruun, Hillerød Hospital)

Hygienic measures

C. difficile is excreted via faeces and may be transferred faecal-orally and via direct and indirect contact (contact points in the patients' immediate surroundings such as bedside tables, guard rails, walking bars, linen, clothing and via toilet & bathing facilities, and door handles). After excretion, the bacteria transform into spores, which may survive for a considerable period of time in the surroundings.
On clinical suspicion of C. difficile infection, patients should be assigned single-bed rooms with separate bathrooms as other patients with gastroenteritis. Cohort isolation may be used in case of a department outbreak.
Furthermore, the following measures should be implemented:
A gown should be worn for activities requiring direct patient contact such as washing/bathing, changing of dressings, assistance to go to toilet/use of bedpans, etc. Gloves are worn where contact with the patient, devices and inventory is needed.
As the infection primarily transfers via contact, good hand hygiene is instrumental in preventing the infection from spreading. Given that the spores are not sensitive to alcohol, hand disinfection alone is insufficient. Hand washing followed by hand disinfection is performed after any contamination and before leaving the room. Blood pressure cuff, thermometer and the like should stay with the patient. Use of shared devices and equipment such as patient phones is minimised.
Relatives are instructed in good hand hygiene.
The department's patients are offered assistance to wash their hands prior to any meals and in connection with toilet visits.
Dirty laundry and waste is placed in laundry/waste containers in the room. Clothing and bed linen are washed at no less than 80°C for a minimum of 10 minutes.
Thorough cleaning of the room and toilet/bathing facilities using standard cleaning agents is performed daily. Contact points are disinfected with a suitable cleaning agent.
On suspicion of an outbreak, the hospital's management and hygiene organisation are informed. Isolation measures may be lifted after 48 hours with normal stools.
At patient discharge or if isolation is lifted during admission, the entire room must be thoroughly cleaned with standard cleaning agents including all horizontal surfaces, and any equipment and devices. Equipment and inventory including the bed and all contact points must be are disinfected. Curtains are sent to the laundry for washing.
Heat disinfection is the preferred disinfection method. Where chemical disinfection is used, disinfectants containing chlorine or sodium perborate (Perasafe®) are well-suited. Hydrogen peroxide vaporization by robot is also efficient for final cleaning.
(A. Kjerulf, E.T. Jensen, Dept. of Antibiotic Resistance and Hospital Hygiene)

25 March 2009

Individually notifiable diseases

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

Table 1	Week 12 2009	Cum. 2009 [1]	Cum. 2008 [1]
AIDS	0	6	10
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob	0	4	1
Diphtheria	0	0	0
Food-borne diseases	12	95	69
of these, infected abroad	0	14	17
Gonorrhoea	14	132	76
Haemorrhagic fever	0	0	0
Hepatitis A	0	7	14
of these, infected abroad	0	5	6
Hepatitis B (acute)	0	5	3
Hepatitis B (chronic)	7	42	44
Hepatitis C (acute)	0	4	3
Hepatitis C (chronic)	0	80	97
HIV	1	56	47
Legionella pneumonia	5	31	21
of these, infected abroad	2	4	10
Leprosy	0	0	0
Leptospirosis	0	0	1
Measles	0	8	4
Meningococcal disease	0	17	19
of these, group B	0	7	7
of these, group C	0	6	4
of these, unspec. + other	0	4	8
Mumps	1	3	12
Neuroborreliosis	0	3	18
Ornithosis	0	0	1
Pertussis (children < 2 years)	5	27	24
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	2	0
Listeria monocytogenes	0	2	1
Streptococcus pneumoniae	0	23	27
Other aethiology	0	2	10
Unknown aethiology	0	3	7
Under registration	4	25	-
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	3	23	16
of these, infected abroad	2	22	14
Syphilis	6	61	27
Tetanus	0	0	0
Tuberculosis	12	105	89
Typhoid/paratyphoid fever	0	3	9
of these, infected abroad	0	0	7
Typhus exanthematicus	0	0	0
VTEC/HUS	4	28	25
of these, infected abroad	1	7	8

[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 12 2009	Cum. 2009 [2]	Cum. 2008 [2]
Bordetella pertussis			
(all ages)	5	36	34
Gonococci	8	95	91
of these, females	3	20	19
of these, males	5	75	72
Listeria monocytogenes	0	14	5
Mycoplasma pneumoniae			
Resp. specimens [3]	2	24	34
Serum specimens [4]	2	42	41
Streptococci [5]			
Group A streptococci	0	53	35
Group B streptococci	0	19	23
Group C streptococci	0	7	3
Group G streptococci	0	35	24
S. pneumoniae	27	391	295
Table 3	**Week 10 2009**	**Cum. 2009 [2]**	**Cum. 2008 [2]**
MRSA	5	150	97
Pathogenic int. bacteria [6]			
Campylobacter	25	273	343
S. Enteritidis	3	41	59
S. Typhimurium	14	189	67
Other zoon. salmonella	11	122	145
Yersinia enterocolitica	5	38	43
Verocytotoxin-producing E. coli	3	23	27
Enteropathogenic E. coli	5	29	15
Enterotoxigenic E. coli	10	40	58

[2] *Cumulative number 2009 and in corresponding period 2008*

[3] *Resp. specimens with positive PCR*

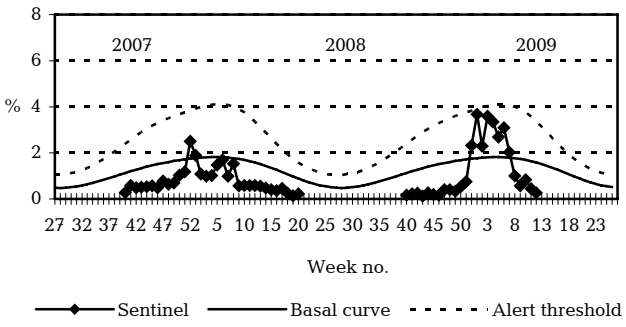
[4] *Serum specimens with pos. complement fixation test*

[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

25 March 2009