

## **Buckinghamshire Hospitals NHS Trust**

### **Fact sheet on *Clostridium difficile***

#### **Q1. What is *Clostridium difficile*?**

*C. difficile* is a spore forming bacterium which can be part of the normal gut flora. It was first described in 1935 when it was isolated from stool samples of newborn babies. It was not until the mid 1970s that it became recognised as a cause of antibiotic-associated diarrhoea and inflammation of the bowel.

#### **Q2. How do you catch it?**

*C. difficile* is present as one of the 'normal' bacteria in the gut of up to 3% of healthy adults, whilst it is much more common in babies it rarely causes problems. Rates of colonisation and infection increase over the age of 65 years. *C. difficile* can cause illness when certain antibiotics disturb the balance of "normal" bacteria in the gut. Symptoms are generally caused by the production of toxins in the large bowel once the bacteria have become established. Its effects can range from nothing in asymptomatic colonisation to diarrhoea of varying severity, which may resolve once antibiotic treatment is stopped, through to severe inflammation of the bowel which can sometimes be life threatening.

It is possible for the infection to spread from person to person because those suffering from *C. difficile* associated disease shed spores in their faeces. Spores can survive for a very long time in the environment and can be transported on the hands of health care personnel who have direct contact with infected patients or with environmental surfaces (floors, bedpans, toilets etc.) contaminated with *C. difficile*.

#### **Q3. What are the symptoms of *C. difficile* infection?**

The effects of *C. difficile* can vary from nothing (colonisation with the organism) to diarrhoea of varying severity and much more unusually to severe inflammation of the bowel.

#### **Q4. How do doctors diagnose *C.difficile* infection?**

Infection is normally diagnosed through the detection of *C. difficile* toxins in faecal samples.

#### **Q5. Who does it affect? Are some people more at risk?**

Frail and vulnerable patients are most at risk and over 80% of cases are reported in the over 65-age group. Immuno-compromised patients are also at risk. Children under the age of 2 years are not usually affected. Repeated enemas and/or gut surgery increase a person's risk of developing the disease. *C. difficile* infection occurs when the normal gut flora is altered, allowing *C. difficile* to flourish and produce a toxin that causes a watery diarrhoea. Antibiotics may also alter the normal gut flora and increase the risk of developing *C. difficile* diarrhoea.

**Q6. How can it be treated?**

Standard treatment regimens involve the use of one of two antibiotics, given by mouth; metronidazole or vancomycin. There is a risk of relapse in 20-30% of patients.

**Q7. How can hospitals prevent the spread of *C.difficile*?**

Unfortunately patients with diarrhoea, especially if severe or accompanied by incontinence, may unintentionally spread the infection to other patients, which may lead to outbreaks of *C. difficile* in hospitals. In addition, the ability of this bacterium to form spores enables it to survive for long periods in the environment (e.g. on floors and around toilets). Staff should wear disposable gloves and aprons when caring for infected patients and affected patients should be segregated from others who are not infected. Rigorous cleaning with hypochlorite is probably the most effective means of removing spores from the contaminated environment, whilst all staff should observe good hand washing practice.

**Q8. How can infection with *C.difficile* be prevented?**

The appropriate use of antibiotics is the key to the prevention and control of *C. difficile* infection. Where possible, short courses of antibiotics of only three to five days are preferred to longer courses. In addition, narrow-spectrum antibiotics e.g. penicillin, which kill a selected range of bacteria are preferred to broad-spectrum ones which can have an effect on a wide range of bacteria. Both of these steps will minimise the alteration of the normal bacterial flora of the bowel, which is a key factor in the development of this condition. A short course of a narrow-spectrum antibiotic is particularly advisable when the precise cause of a bacterial infection is known. When a patient is identified as having *C. difficile* diarrhoea the infection control measures such as hand washing and cleaning of the surrounding environment will minimise the risk of spread to others.

**Q9. Is it resistant to antibiotics?**

No. *C.difficile* can be treated with commonly used antibiotics such as metronidazole. There are no reports of resistance to either vancomycin or metronidazole, which are used to treat the infection.

**Q10. Do patients recover from *C. difficile* infection?**

Most cases of *C.difficile* diarrhoea make a full recovery. However, elderly frail patients with other underlying conditions may have a more severe reaction. Occasionally, infection in these circumstances may be life threatening.

**Q11. Is this another hospital 'super bug'? Is it worse than MRSA?**

No The term 'superbug' usually refers to bacteria that have acquired drug resistance and is hence more difficult to treat because the treatment options are limited. We do not have reports of *C. difficile* isolates that are resistant to the usual antibiotics used to treat it.

**Q12.Can proper hand washing help control C.difficile?**

Strict adherence to hand washing techniques, the proper handling of contaminated waste and cleaning of the environment are important infection control measures. Surfaces contaminated with *C. difficile* spores should be cleaned with hypochlorite. Hospital staff such as nurses and doctors, and patients' relatives are at little risk of catching the illness themselves. However, should these people be receiving antibiotics then they may be at some risk of infection, and therefore they should be especially scrupulous in their hand washing.

It must be highlighted that this infection usually occurs when the natural flora in the gut is unbalanced by certain treatment. It also must be highlighted that there are various treatment options for this condition.

**Q13. What is the Government doing about this?**

The Government established a mandatory surveillance scheme in 2004. This represented an extension of the national healthcare-associated infection surveillance initiative that includes mandatory *Staphylococcus aureus* bacteraemia surveillance. **It has also issued guidance to hospitals on how to deal with this infection.**

**Q14. How long have these figures been rising? What is the increase year on year?**

Nationally, there has been a rise in the number of reports of *C. difficile* in recent years with year on year increases in 2002 and 2003 of 31% and 23% respectively. Overall the number of reports of *C. difficile* has risen by 97% between 2001 and 2004. The data in this latest report of voluntary reporting of *C. difficile* shows that overall the number of reports has increased by 22% between 2003 and 2004. It is not clear how much the increase in the number of reports is due to improved reporting of cases or an actual rise in the incidence of *C. difficile* infection.

The numbers of reports of Clostridium difficile infections diagnosed nationally from faecal specimens for the last four years were:

- 2000        20,556 reports \*
- 2001        22,008 reports \*
- 2002        28,986 reports \*
- 2003        35,537 reports \*
- 2004        43,442 reports \*

\* Provisional data

**Q15. What are the long-term health effects of this infection?**

Most cases of *C.difficile* diarrhoea make a full recovery. However, elderly patients with other underlying conditions may have a more severe reaction. Occasionally, infection in these circumstances may be life threatening.

**Q 16. Is it true that Stoke Mandeville has an unusual strain of C difficile?**

Stoke Mandeville first reported cases of an unusual strain of the bacterium in 2004, and now routinely types which strain is present. Recently, few cases of this strain have been seen at the hospital.

**Q17. Is this the same strain as has caused a number of deaths in Canada and USA?**

The unusual strain found is closely related to that discovered in the US and Canada.

The majority of Trusts do not routinely type this organism. The Trust was proactive in contacting the overseas hospitals who have experience in the related strain to understand more fully the nature of the bacterium and how best to respond.

**Q18. How long has there been a problem at Stoke Mandeville?**

The Trust first noticed an increase in the number of reports of patients with *C. difficile* in late 2003. There were two peaks in the number of cases during March 2004 and February 2005, with a much smaller peak in December 05. Since then, this infection has been brought under control and numbers of cases are very low at present.