

**What exactly is meant by “patient safety”?**

Patient safety is in relation to infection prevention and control in health care institutions in managing healthcare-associated infections such as *Clostridium difficile* (*C. difficile*).

**Are hospitals safe?**

The global rise in healthcare-associated infections cannot be either explained by, or resolved by any single factor. In part, they are a reality of modern, sophisticated healthcare.

Modern medicine is achieving increasing success in expanding the boundaries of life – from being able to keep tiny premature babies alive and helping them go on to live healthy lives – to the other end of the lifespan spectrum where we are able to keep people alive for longer, living healthier lives; or even to extend the lives of those living with long term conditions and other illnesses that in the past would have cut them short.

With these advances come increased vulnerability and risks.

Some risk factors can be reduced or eliminated; and some cannot. We continue to enhance our efforts and success at treating and managing healthcare-associated infections; and to ensure that we are doing everything possible to prevent every infection.

**So why are we hearing now about so many healthcare-associated infections?**

With the technological and scientific advances we have made in modern medicine diagnostics, we are now far more aware of other contributing factors to an illness or death, than we were twenty or thirty years ago.

The infections are not new, what is new is our level of knowledge and expertise in tracking and managing these infections.

**So how does someone get a healthcare-associated infection?**

People carry a number of bacteria on their bodies. When they are healthy, this is not a major risk to their health. For example, a fair percentage of the population carries a bacteria called *Staphylococcus Aureus* on their skin. This is called ‘carriage’. In healthy people this doesn’t present a problem. But if they are ill, or the natural defence system that their skin provides is breached in some way (for example, through a cut or a wound) bacteria do present a greater risk – both to the individual and to others who are also more vulnerable through illness.

This is especially the case if someone needs to have treatment in hospital as an in-patient. If a patient has a surgical wound or perhaps a ‘drip’; or their normal immune systems are low due to an illness or as a result of medications or treatments that might be essential, such as chemotherapy or antibiotics, they are more vulnerable to bacteria on their bodies and to those of other patients. Sometimes those bacteria can cause infections.

**How do hospitals reduce the risks healthcare-associated infections like *C. difficile*?**

There are a number of ways hospitals are working to reduce the risks of healthcare-associated infections like *C. difficile*.

- **Hand hygiene**

In healthcare settings like hospitals, the hand hygiene practice of healthcare workers is a key factor in helping protect patients from the transfer of potentially infection-causing germs. To keep patients safe, healthcare professionals and any other staff who interact with a patient need to clean their hands every time they interact with the patient, and again, when they are finished.

This sounds simpler than it is. Sometimes the sheer pace and volume, physical design and unpredictability of the healthcare environment make it difficult for healthcare workers to follow ideal practice every time. The Ontario government has developed a program and tools to help make it easier – for example, providing alcohol-based handrubs at the point of care so that healthcare workers do not have to look around for a sink to clean their hands quickly and safely; recommending that newly built facilities have more availability of sinks; raising awareness and conducting training of all staff to ensure that they understand exactly when and how they should be cleaning and disinfecting their hands to keep patients safe.

- **Environmental cleaning and the use of personal protective equipment**

Hospitals are quite vigilant in ensuring that patient rooms are properly cleaned and disinfected, especially any rooms that have had a patient with a healthcare-associated infection. In that case, particular attention is paid to the cleaning of all patient-specific items and “high-touch” surfaces such as bed rails, telephones, door knobs, etc.

Healthcare workers will often use gloves when caring for a patient, however, gloves alone will not completely prevent the spread of germs that can cause infection from one patient to the next. Hand hygiene is still essential, even when gloves have been used.

When there is an ‘outbreak’ of a healthcare-associated infection such as *C. difficile*, the use of gowns, eyewear, gloves and increased environmental cleaning becomes essential.

- **Isolation of infected patients**

All efforts are made to isolate any patient who is suspected of having a healthcare-associated infection such as *C. difficile*, into a single room with a private bathroom or individual commode chair.

## **CLOSTRIDIUM DIFFICILE**

### **What is Clostridium difficile?**

Clostridium difficile – or *C. difficile* as it is commonly called - is not new. And although people associate it with healthcare, it doesn't come from hospitals or laboratories. It is found in the intestine, occurring naturally in many people, and commonly in older people. Just as many healthy individuals have Staphylococcus Aureas present on their skin, many healthy individuals have *C. difficile* living in their intestines where it does them no harm.

Clostridium difficile associated disease (CDAD) usually strikes people who were already unwell and have been given antibiotics recently. The disease occurs when the antibiotics kill the good bowel bacteria and allow the *C. difficile* bacteria to grow. When *C. difficile* grows, it produces toxins, which can damage the bowel and may lead to watery diarrhea, fever and abdominal pain or tenderness.

*C. difficile* disease [OR SHOULD THAT BE CDAD?] is usually mild but sometimes it can be severe. In severe cases, surgery may be needed, and in extreme cases, it may cause death. *C. difficile* is the most common cause of infectious diarrhea in hospitals and long-term care homes.

CDAD has most commonly been seen among older people who are already unwell or very frail and had recently taken a course of antibiotics.

### **If *C. difficile* is not new why is it suddenly such a problem?**

There are a number of strains of *C. difficile* that have become extremely toxic in recent times. The scale of *C. difficile* related infections are a growing problem in a number of countries around the world, including the UK and the USA. This may in part be due to the nature of micro-organisms which are adept at mutating. For example, the commonly quoted 'superbug' MRSA is a hardy strain of Staphylococcus Aureas – the same bacteria carried on many people's skins - that has become resistant to Methicillin: the medicine historically used to treat it.

In the case of *C. difficile* it is also thought that over-use or inappropriate use of broad-spectrum antibiotics has played a role in the increasing toxicity of the bacteria. If we consider the nature of these more dangerous strains in the context of high-risk individuals (people who are already frail or ill and being cared for in hospital) it is not difficult to understand how contact with the bacteria can lead to infection and serious illness.

### **Is there a vaccine for *C. difficile*?**

It can take very long periods and a huge investment to develop vaccines. In dealing with *C. difficile* we have the challenge of a bacteria that is able to produce new strains of itself in order to survive. The best prevention is to find fast and effective ways of preventing as many people as possible from developing *C. difficile* infections in the first place. Implementing and following rigorous hygiene routines is key in healthcare settings, along with the need to review and improve antibiotic prescribing practices.