Hospital Acquired Infections: Information Sheet

Southlake Regional Health Centre strongly supports the provincial government's new public reporting regime because we believe that performance monitoring and public accountability inspire improved performance, enhance patient safety, and strengthen the public's confidence in Ontario's hospitals. We are committed to sharing important measures of quality, safety and customer satisfaction with our community, not only through this initiative, but also through our established Scorecard reporting web page "Our Performance"

For our current performance on the infection rates outlined here please visit the patient safety indicator section of "Our Performance"
This information is based on fact sheets posted on the Ministry of Health and Long Term Care's patient safety site. For more information visit http://www.health.gov.on.ca/patient_safety/public/ps_pub.html

Clostridium difficile Infection (CDI) (Monthly Reporting)

C. difficile is one of many types of bacteria that can be found in the environment and in feces (bowel movement), and has been a known cause of health care-associated diarrhea for about 30 years. It occurs naturally in about 3-5% of the population, without causing symptoms or any health risk.

> **Clostridium difficile Infection (CDI) -** Diarrhea with laboratory confirmation of the presence of the C. difficile organism, or a diagnosis through endoscopic procedure or examination of a colon specimen by a pathologist
>
> **Nosocomial or Hospital Acquired CDI -** CDI where symptoms were not present on admission or in the first 72 hours of hospitalization.

The use of antibiotics, such as in a healthcare environment, increases the chances of developing *C. difficile* diarrhea as it alters the normal level of good bacteria found in the intestines and colon. Without the presence of the normal bowel bacteria, the *C. difficile* bacteria may start to grow and produce a toxin that can damage the bowel and lead to watery diarrhea, fever and abdominal pain or tenderness. The effects of CDI are usually mild. In some severe cases, however, surgery may be needed, and in extreme cases CDI may cause death.

How is the rate calculated?

- **New Cases:** The total # of new hospital acquired cases each month. Counts of 0 and counts of 5 or more are reported.
- **CDI Rate:** The infection rate is calculated as a rate per 1,000 patient days. The "total patient days" represents the sum of the number of days during which services were provided to all inpatients during the given time period. It excludes children under the age or 1. The rate is calculated on a monthly basis and equals the total # of new Nosocomial CDI cases times 1000 divided by the total # of inpatient days.
- Based on Ministry guidelines, where the number of cases is zero or greater than 5 the number of cases will also be posted. If the case number is between 1 and 4 then the case number will be reported as <5

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Methicillin-Resistant Staphylococcus Aureus (MRSA) (Quarterly Reporting)

Methicillin-resistant Staphylococcus aureus (MRSA) is a type of bacteria that lives on the skin and mucous membranes of healthy people and is resistant to certain types of antibiotics. It can be spread by contact with hands or objects in the patient's environment that have been contaminated with the germ. These infections may be minor but they can cause delayed healing or other complications. A Nosocomial MRSA infection is one that developed during the hospital stay and was not present on admission

What is MRSA Bacteremia Infection?

A laboratory confirmed bloodstream infection with Methicillin-resistant Staphylococcus aureus (MRSA Bacteremia). A blood stream infection is a single positive blood culture for MRSA.

Indicator Definition

- **New Cases:** The total # of new hospital acquired bloodstream infection for each 3 month period. Counts of 0 and counts of 5 or more are reported.

- **MRSA Rate:** The infection rate is calculated as a rate per 1,000 patient days. The "total patient days" represents the sum of the number of days during which services were provided to all inpatients during the given time period. The rate is calculated on a quarterly basis and equals the total # of new Nosocomial MRSA Bacteremia cases times 1000 divided by the total # of inpatient days.

- Based on Ministry guidelines, where the number of cases is zero or greater than 5 the number of cases will also be posted. If the case number is between 1 and 4 then the case number will be reported as <5

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Vancomycin-resistant Enterococci (VRE) (Quarterly Reporting)

Enterococci are bacteria that are normally present in the human intestines and in the female genital tract and are often found in the environment. These bacteria can sometimes cause infections. Vancomycin is an antibiotic that is often used to treat infections caused by enterococci. In some instances, enterococci have become resistant to this drug and thus are called vancomycin-resistant enterococci (VRE). If a patient has an infection caused by VRE it may be more difficult to treat. A Nosocomial VRE infection is one that developed during the hospital stay and was not present on admission

What is VRE Bacteremia Infection?

A laboratory confirmed bloodstream infection with Vancomycin-resistant Enterococci (VRE Bacteremia). A blood stream infection is a single positive blood culture for VRE.

How is the rate calculated?

- **New Cases:** The total # of new hospital acquired cases of bloodstream infection with VRE for each 3 month period. Counts of 0 and counts of 5 or more are reported.

- **VRE Bacteremia Rate:** The infection rate is calculated as a rate per 1,000 patient days. The "total patient days" represents the sum of the number of days during which services were provided to all inpatients during the given time period. The rate is calculated on a quarterly basis and equals the total # of new Nosocomial VRE Bacteremia cases times 1000 divided by the total # of inpatient days.

- Based on Ministry guidelines, where the number of cases is zero or greater than 5 the number of cases will also be posted. If the case number is between 1 and 4 then the case number will be reported as <5

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Central Line Infection (CLI) (Quarterly Reporting)

What is a Central Line Bloodstream Infection?

A central line infection occurs when a central venous catheter (or “line”) placed into a patient’s vein gets infected. This happens when bacteria grow in the line and spreads to the patient’s bloodstream.

This bloodstream infection (BSI) is considered to be associated with a central line if the line was in place during the 48 hour period before the development of the BSI

Why do we use Central Lines?

Patients require a central line when blood, fluid replacement, medication and /or nutrition need to be given to them intravenously. Central lines also allow health care providers to monitor fluid status and make determinations about the heart and blood.

Why do we track CLI rates?

The analysis of our CLI rates over time will provide us with helpful information that we can use to monitor quality improvements in our organization.
Southlake Regional Health Centre is an active participant in the Safer Healthcare Now! (SHN) Central Line Infection prevention initiative. An interdisciplinary improvement, led by our Intravenous Team has been working to improve our consistent application of all known best practices for the insertion and maintenance of Central Lines.
Southlake has been tracking CLI rates in our main ICU as part of the SHN initiative for the past 18 months. Analysis of our early results has led to improvements in the supplies & equipment provided for each insertion and team education on specific best practices. The spread of this monitoring to all of our intensive care units will establish a hospital wide baseline and support effective spread of best practices to all critical care areas.

How is the rate calculated?

- The CLI rate is determined by the total number of newly diagnosed central line bloodstream infection cases in each of our ICU areas by the total number of days a central line was used on any ICU patient. That number is then multiplied by 1,000 resulting in a CLI rate per 1000 central line days.
- Only patients 18 years and older are included in the rate.
- The indicator is calculated every three months (quarterly)
- Based on Ministry guidelines, where the number of cases is zero or greater than 5 the number of cases will also be posted. If the case number is between 1 and 4 then the case number will be reported as <5

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Ventilator Associated Pneumonia (VAP) (Quarterly Reporting)

What is Ventilator Associated Pneumonia?

VAP is a serious lung infection that can develop in patients for many reasons. Because they are relying on an external machine to breath, their normal coughing, yawning, and deep breath reflexes are lowered. Patients may also have a depressed immune system, making them more vulnerable to infection.

For public reporting purposes, ventilator associated pneumonia (VAP) is defined as a pneumonia (lung infection) occurring in ICU patients who require mechanical breathing support (ventilation) for more than 48 hours. Mechanical ventilation may be continuous or intermittent and occur through a tracheostomy or endotracheal tube

Why do we track VAP rates?

VAP is a serious lung infection that requires treatment with antibiotics, because the patients who develop VAP are already quite ill, the goal of monitoring is to identify how successful we are in preventing this complication.

Southlake has been tracking VAP rates in our main ICU for 3 years as part of our participation in the Safer Healthcare Now! VAP prevention initiative. We have been working to improve the consistency with which we apply all known best practices for VAP prevention. Our rate of VAP decreased within 6 months of starting our SHN initiative. We continue to work to provide the best possible care to ICU patients to minimize the risk of VAP.

How is the rate calculated?

- The VAP rate is calculated by taking the total number new VAP cases occurring after at least 48 hours of mechanical ventilation, divided by the total number of days that any patient was on a ventilator, multiplied by 1,000.
- Only patients 18 years or older are included in the calculation.
- The indicator is calculated every three months (quarterly)
- Based on Ministry guidelines, where the number of cases is zero or greater than 5 the number of cases will also be posted. If the case number is between 1 and 4 then the case number will be reported as <5

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