Extended Spectrum Beta Lactamase Producing Microorganisms (ESBLs)

ESBLs are bacterial enzymes with the ability to break down a wide range of β-lactam antimicrobials, including penicillins and extended-spectrum cephalosporins (e.g., ceptriaxone and/or ceftazidime). These enzymes do not hydrolyze carbapenems. ESBLs may be produced by many different gram negative bacteria, but are most commonly found in strains of *Escherichia coli* and *Klebsiella pneumoniae*. Strains which produce these enzymes are frequently also resistant to other antimicrobials, including trimethoprim-sulfamethoxazole and fluoroquinolones, so antimicrobial treatment options may be limited.

In most cases, a person’s immune system is able to successfully resist infection with ESBL producing bacteria, so patients are colonized rather than infected. However, people who become infected and have weak immune systems are at risk of antimicrobial treatment failure. This includes neonates, children, the elderly, and people with chronic health conditions.

ESBL-producing gram negative bacteria can survive in the health care environment but the environment has rarely been implicated in outbreaks. Preventing transmission of ESBL-producing bacteria requires adherence to Routine Practices, with particular attention to hand hygiene. Additional Precautions are not required.

Infection Prevention and Control Practices
Maintain Routine Practices only; Contact Precautions are not required.

Vancomycin Resistant Enterococci (VRE)

Enterococci are bacteria that are part of the normal flora of the gastrointestinal tract of healthy individuals. They may also colonize the vagina, oral cavity, perineal area, hepatobiliary tract and upper respiratory tract. Human faeces contain the greatest quantity of enterococci, and the faecal-oral route is the usual route of transmission. Enterococci seldom cause severe infection, but, immune suppressed patients and patients with central vascular lines may be affected. Enterococci may also contribute to the contamination of open wounds and decubitus ulcers, creating a reservoir for the organism. Although *E. faecalis* is responsible for the majority of infections caused by enterococci, *E. faecium* has greater intrinsic resistance to multiple antimicrobials and is the most commonly detected VRE.

Enterococci have always had inherent resistance to many antimicrobials and can readily acquire resistance to other antimicrobials. Vancomycin-resistant enterococci (VRE) are enterococci that have acquired resistance to vancomycin, the drug of choice for treating multi-drug resistant enterococci infections. VRE is neither more pathogenic nor more virulent than other enterococci, e.g., it is not more likely to cause infection, nor does it cause more serious infection than other enterococci. Historically there were concerns VRE would cause many deaths, be untreatable and share its resistance genes with other organisms. After almost 20 years of experience with VRE in Canada, colonization with these strains has been common
in health care settings, but infections are infrequent, and therefore there has been a reevaluation of the approach to the management of persons with VRE. In addition, there are now a number of effective antimicrobials available, and transfer of resistance genes to MRSA has seldom been observed.

**Infection Prevention and Control Practices:**

*Maintain Routine Practices only; Contact Precautions are not required*

- Do not screen on admission
- Do not flag or deflag health records of VRE Positive or Suspects
- No special infection prevention and control measures for home visits, discharge or transfer of VRE Positive or Suspects including specific areas of health care facilities, (e.g. operating room, rehabilitation)