

EXTENDED SPECTRUM BETA-LACTAMASE (ESBL)

What is ESBL?

Extended Spectrum Beta-Lactamase (ESBL) is an enzyme found in some strains of bacteria that are usually found in the bowel. ESBL-producing bacteria cannot be killed by many commonly used antibiotics, which makes these infections harder to treat.

ESBL-producing bacteria can cause several different infections, including urinary tract and bloodstream infections.

Some people carry ESBL-producing bacteria without it causing them any harm or symptoms of infection. This is called colonization.

How does ESBL spread?

ESBL-producing bacteria are typically spread in health care facilities such as hospitals, which is why proper infection prevention and control practices at these facilities is so important.

If a person is colonized or infected with an ESBL, the bacteria can be spread to other people through direct contact (usually from the hands of health care workers) or indirectly through contact with shared items or surfaces (e.g., urinals, etc.).

ESBL can survive for weeks on equipment and surfaces such as door and equipment handles, and handrails and bedrails if they are not properly cleaned and disinfected.

What are risk factors for ESBL infection?

ESBL infection is more likely to develop among the elderly, individuals who are hospitalized, and those with severe disease or weakened immune systems. ESBL-producing bacteria are becoming more common in the community.

Risk factors for getting ESBL-producing bacteria include:

- Prolonged hospital stays
- Invasive medical procedures
- Use of invasive devices such as urinary catheters or ventilators
- Previous use of antibiotics

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If a person has the bacteria present in their body (colonization) but has no symptoms of an infection with ESBL, they do not usually need treatment.

ESBL infections are difficult to treat and require a combination of antibiotics which are not always effective. Anyone who thinks they have an infection should seek medical attention immediately.

What can be done to prevent the spread of ESBL?

HAND HYGIENE

Proper hand hygiene is one of the most effective ways to reduce the risk of getting colonized or infected with ESBL.

Practice good hand hygiene before and after contact or care with patients/residents.

Proper hand hygiene techniques include washing hands for 15 seconds with soap and running water or applying alcohol-based hand rub (70-90% ethanol or isopropyl alcohol) to all areas of your hands (use a thumb-sized amount) and rubbing hands until they are dry.

Hands should be cleaned:

- After using the bathroom
- After blowing your nose
- Before eating and drinking
- Before and after touching dressings or wounds
- When hands are visibly dirty (soiled)
- Before entering or leaving a resident/patient room

It is also important to educate and remind patients/residents about the proper way to perform hand hygiene.

ADDITIONAL MEASURES

Additional measures need to be taken in the health care facility to stop ESBL from spreading to other people. The following measures should be taken for a colonized or infected individual:

- Private room accommodation is preferred (the door can remain open)
- Hand hygiene is performed by everyone who enters and leaves the room
- Long-sleeved gown and gloves are worn by everyone who provides direct care
- The proper steps for putting on and taking off personal protective equipment are followed



- Signage is placed on the door to remind anyone entering the room what measures need to be taken
- Equipment is dedicated to the patient/resident or adequately cleaned and disinfected after each use if it is shared. This includes transport equipment (e.g., wheelchairs)
- The room and equipment used in the room is cleaned and disinfected daily
- The room is terminally cleaned upon discharge or after Additional Precautions have been discontinued. Fresh supplies should be stocked

References

<https://www.publichealthontario.ca/-/media/documents/a/2013/aros-screening-testing-surveillance.pdf>