



CARBAPENEM-RESISTANT GRAM-NEGATIVE BACILLI Fact Sheet for Healthcare Professionals

What are Carbapenem-resistant Gram-negative bacilli (CRGNB)?

Recent reports from around the world indicate an increasing occurrence of antimicrobial resistance in Gram-negative bacteria. Of particular concern is the development of resistance to a group of antibiotics called carbapenems. The carbapenem group of antimicrobials has been a safe and generally effective treatment for severe Gram-negative bacterial infections when resistance to other classes of antimicrobials is present. When resistance to carbapenems occurs, there are often few alternatives treatments available. Carbapenem resistance develops as a result of the production of carbapenem-hydrolysing enzymes (carbapenemases). Some examples of recently identified carbapenemases are:

- *Klebsiella pneumoniae* carbapenemase which have caused major healthcare related outbreaks in Greece, Israel and north eastern USA
- New Delhi metallo (NDM) beta-lactamase found in *Escherichia coli* and *Klebsiella pneumoniae* which has recently been identified in India and Pakistan and in patients hospitalized in other countries after receiving health care in India and Pakistan

How are CRGNB spread?

The most common form of transmission is by direct and indirect contact with an infected person.

Risk factors for CRGNB infections

There should be a high index of suspicion for the presence of CRGNB in patients at risk for infection with these bacteria, including: patients transferred from facilities known to have high CRGNB prevalence rates, roommates of CRGNB colonized or infected patients; and patients known to have been previously infected or colonized with a CRGNB. Laboratory testing for asymptomatic carriage of CRGNB is not routinely recommended.

Good Hand Hygiene Practices

Hand hygiene is the single most important way to prevent the spread of infections. Perform hand hygiene using an alcohol based hand rub (60-90%) or use soap and water if hands are visibly soiled.

Hand hygiene should occur:

- Before client/patient/resident or environment contact
- Before performing aseptic procedures
- After care involving bodily fluids
- After client/patient/resident or environment contact

Prevention and Control of CRGNB

- Place patients with known or suspected (pending results) CRGNB infection or colonization on Contact Precautions.

- A single room is preferred. If respiratory infection is also suspected, use Droplet and Contact Precautions
- Place infection control signage on the door
- Personal Protective Equipment (PPE)
 - Gloves should be worn when entering the room
 - Gown should be worn if direct contact with the patient or with environmental surfaces or objects is anticipated
 - Perform hand hygiene after removing gown and gloves and after leaving the room
- Dedicate patient care equipment for the use of one patient
 - Clean and disinfect equipment according to Routine Practices
 - Equipment shared with between patients should be cleaned and disinfected before use on another patient
- Environmental Cleaning
 - All horizontal and frequently touched surfaces should be cleaned at least twice daily and when soiled
 - Hospital-grade cleaning and disinfecting agents are sufficient for environmental cleaning
- Dishes/Laundry/Waste Management
 - No special precautions are recommended; Routine Practices should be followed
- Discontinuing Precautions
 - Consult Infection Prevention and Control. Contact Precautions should continue for the duration of the hospitalization during which the CRGNB was first isolated
 - Patients readmitted within 12 months of that hospitalization should be considered probably colonized with CRGNB and placed on Contact Precautions

Family & Visitors

All families/visitors should practice good hand hygiene before and after washing leaving the client/patient/resident room.

Families/visitors who provide direct care are to wear the same PPE as staff. "Direct care" is defined as providing hands-on care such as bathing, washing, turning the client/patient/resident, changing clothes/incontinent pads, dressing changes, care of open wounds/lesions and toileting. Feeding and pushing a wheelchair are not classified as direct care.

Written information should be available for clients/patients/residents that explains the precautions required.

Source: Provincial Infection Control (PIC-NL)

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