

What is carbapenem-resistant *Pseudomonas aeruginosa* (CRPA)?

Pseudomonas infection is caused by strains of bacteria found widely in the environment. The most common type causing infections in humans is called *Pseudomonas aeruginosa*. Carbapenems are a class of antibiotics that were developed to treat bacteria that are resistant to other drugs. Because of the overuse of these antibiotics, some types of *Pseudomonas* have developed resistance to carbapenems, and these bacteria are called carbapenem-resistant *Pseudomonas aeruginosa* (CRPA).

Who gets CRPA?

Healthy people usually do not get CRPA infections. In healthcare settings, CRPA infections might occur in patients who are receiving treatment for other conditions. Patients whose care requires devices like ventilators (breathing machines), urinary (bladder) catheters, or intravenous (vein) catheters, and patients who are taking long courses of certain antibiotics are most at risk for CRPA infections.

How are CRPA spread?

CRPA can be transmitted by direct contact with an infected person or by contact with contaminated items (e.g., medical equipment) or environmental surfaces (e.g., bed rails, door knobs).

What are the symptoms of CRPA?

Some people carry CRPA bacteria in their bodies without any symptoms. This is called being "colonized." A person might be colonized for a long time before getting sick or might never get sick. *Pseudomonas* can cause a variety of infections including gastrointestinal illness, pneumonia, wound infections, and invasive infections of the blood or other body organs. CRPA cause the same infections, but the infections are much harder to treat.

How soon after exposure do symptoms appear?

It is not well known how soon symptoms appear after exposure to CRPA. In most situations, exposure to CRPA does not lead to illness. The person might carry the CRPA in his or her body, but not get sick at all, or might get sick from the CRPA days or weeks later.

How are CRPA diagnosed?

Special laboratory tests are needed to identify specific bacteria that cause infections and which antibiotics, if any, would be effective for treating the infections.

What is the treatment for CRPA?

Treatment options depend on the type of CRPA infection. Some CRPA infections can be treated if the bacteria have not yet developed resistance to certain types of antibiotics. Some types of CRPA are "pan resistant" which means the CRPA bacteria are resistant to all specific antibiotics tested. If you have CRPA, your physician will work with you to figure out the best course of treatment.

What can be done to prevent the spread of CRPA?

Use of good infection prevention practices (such as wearing a gown and gloves when caring for patients with CRPA, and frequent hand hygiene by healthcare workers) can limit the spread of CRPA in healthcare settings. Patients with CRPA should follow all instructions given by their care providers and keep their hands clean, especially after touching the affected area or using the bathroom.

Friends or family members visiting a hospitalized patient with CRPA should follow the hospital's recommended precautions. Healthcare facilities can follow the guidance outlined in the Centers for Disease Control and Prevention (CDC) Interim Guidance for a Health Response to Contain Novel or Targeted Multidrug-resistant Organisms found at <https://www.cdc.gov/hai/containment/guidelines.html>.

What if I have CRPA?

Be sure to notify the healthcare provider every time you go to a medical visit, hospital, nursing home, or dialysis clinic. Bring this paper if you need help remembering the name of the bacteria.

Follow your healthcare provider's instructions. If your provider prescribes you antibiotics, take them exactly as instructed and finish the full course, even if you feel better. Follow any other medical or hygiene advice your provider gives you.

Wash your hands with soap and warm water, especially before eating or preparing food, before and after changing wound dressings or bandages, after using the bathroom, and after blowing your nose, coughing, or sneezing. Use alcohol-based hand sanitizer when soap and water are not available. This is good advice for everyone. Make sure your caregivers wash their hands before they care for you. They should also wash their hands after contact with wounds, helping you use the bathroom, after cleaning up stool, and before and after handling medical devices (e.g., urinary catheters). Gloves should be used for possible contact with body fluids or blood.

What if I am caring for someone with CRPA at home?

CRPA have primarily been a problem among people with underlying medical problems, especially those with medical devices like urinary catheters or those with chronic wounds. Otherwise, healthy people are probably at relatively low risk for problems with CRPA.

People providing care at home for patients with CRPA should be careful about washing their hands, especially after contact with wounds or helping the CRPA patient to use the bathroom or after cleaning up stool. Caregivers should also make sure to wash their hands before and after handling the patient's medical device (e.g., urinary catheter). This is particularly important if the caregiver is caring for more than one ill person at home. In addition, gloves should be used when anticipating contact with body fluids or blood.

How can I get more information about CRPA?

- If you have concerns about CRPA, contact your healthcare provider.

- Call your local health department. A directory of local health departments is located at <http://www.vdh.virginia.gov/local-health-districts/>.
- Visit the Centers for Disease Control and Prevention website about CRPA in the healthcare setting at <https://www.cdc.gov/hai/organisms/pseudomonas.html>.

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