



Pan American  
Health  
Organization



World Health  
Organization  
REGIONAL OFFICE FOR THE  
Americas

# Epidemiological Alert

## Outbreaks of resistant microorganisms associated with medical tourism

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Given an increase in outbreaks caused by resistant microorganisms associated with medical tourism, the Pan American Health Organization / World Health Organization (PAHO/WHO) encourages Member States to strengthen their capacity to detect and manage infections caused by resistant microorganisms in patients who traveled outside of their country of residence to receive healthcare. Furthermore, PAHO/WHO stresses the importance to implement preventive measures to reduce healthcare-associated infections at all levels of the health system.

## Introduction

In recent years, several outbreaks caused by multiresistant bacteria have been reported in the Region of the Americas, some of which were healthcare-associated infections. Reducing the incidence of these types of infections is part of the framework of the *Plan of Action on Antimicrobial Resistance* (1).

Although most patients seek healthcare in the country in which they reside, there is an increasing proportion of persons traveling to receive outsourced medical, dental, or surgical care due to costs, access, or quality of care. This is usually referred to as medical tourism or health tourism<sup>1</sup>.

While there are few published studies about the number of persons seeking healthcare outside of their country of residence, it is estimated that for the United States alone, this annual number has increased from 750,000 to 1.4 million over a 10-year period (2007 to 2017). Some of the main motivations for seeking outsourced medical care include lower costs, avoiding long waiting lists, and opportunities for accessing procedures that are not available in the country of residence. Interventions related to aesthetic and cosmetic surgery represent the largest proportion of procedure types, followed by organ transplants, cardiac surgery, dental procedures, joint procedures, bariatric surgery, and assisted reproduction techniques (2, 3, 4).

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<sup>1</sup> Adopted from the United States Centers for Disease Control and Prevention. Available at: <https://wwwnc.cdc.gov/travel/page/medical-tourism>

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This type of medical care can pose a risk to both public health and the health of the patient. The occurrence and spread of outbreaks by resistant microorganisms are among the public health risks, which are often related to suboptimal practices for preventing health care-associated infections (such as inadequate sterilization of materials and the reuse of syringes), the local resistance profiles, and the inappropriate use of antimicrobials.

## Situation in the Americas

The following includes some of the outbreaks caused by resistant microorganisms which were related to healthcare received in a country other than the patient's residence.

In 2010, three isolates of *Enterobacteriaceae* carrying the NDM-1 (New Delhi metallo- $\beta$ -lactamase-1) resistance gene were reported in the United States from samples of 3 patients who had received medical care in India (5).

In 2012, an outbreak of multiresistant gram-negative carbapenemase-producing bacteria (*Klebsiella pneumoniae*, *Escherichia coli*, and *Acinetobacter baumannii*) was documented at a hospital in Alberta, Canada. The index case was a Canadian patient who had received medical care in India (6).

In February 2019, an outbreak of surgical site infections caused by Verona integron-encoded metallo-beta-lactamase-producing carbapenem-resistant *Pseudomonas aeruginosa* (VIM-CRPA, described for the first time in Verona, Italy) was reported among 20 patients (16 confirmed, 4 suspected) from 9 states in the United States who had undergone bariatric surgery at a hospital in Tijuana, Mexico. Of the 20 cases, 2 were reported retrospectively in patients whose samples were collected in 2015 and 2017, respectively, while the remaining 18 cases had samples collected between September 2018 and January 2019. Among 17 cases with available information on sex and age, 14 (82%) were female, and ages ranged between 29 and 62 years (7).

## Advice for national authorities

Below is highlighted the main advice regarding surveillance, laboratory, case management and infection prevention and control related to outbreaks of resistant microorganisms associated with medical tourism or health tourism.

### Surveillance

The establishment and strengthening of surveillance is fundamental for the identification of risk factors and implementation of appropriate public health measures. To this end, the following is recommended:

- Encourage health professionals to rapidly detect infections in patients who have recently undergone surgical procedures or were hospitalized outside the country of residence, as well as to promptly notify the public health authorities.

- Conduct a rapid outbreak investigation following the initial detection of cases of healthcare-associated infections. Disseminate the available information, implement prevention and control measures, and make recommendations to alert healthcare workers and decision makers at all levels. Communicate the findings immediately to the appropriate authorities in the country where the infection was likely acquired.

## **Laboratory**

Microbiology laboratories are essential for the detection of the etiologic agent and resistance profile. Therefore, it is recommended to:

- Implement the regional protocol for the detection of resistance and shipment of strains to the reference laboratories when a case is suspected <sup>2</sup>.
- Train clinical laboratory personnel in the detection of health care-associated pathogens most commonly acquired from international destinations.
- Ensure clinical laboratories have the capacity to detect and confirm resistance mechanisms that are prevalent within the country as well as imported as a result outsourced medical care, and also have the capacity to identify alternative treatment for resistant pathogens.
- Strengthen the capacity of the national reference laboratories for identification of resistance mechanisms and for performing molecular epidemiology techniques to rapidly characterize isolates from outbreaks and compare them with strains from other countries that are potentially related to the same event.
- Disseminate the findings through existing laboratory networks by the national level in a timely manner to alert for the potential occurrence of other cases, along with guidance for their detection.

## **Case management**

Infections caused by resistant microorganisms should be considered in patients who have undergone surgical procedures and who subsequently acquired surgical site infections that fail to respond to standard antimicrobial treatment. When infections caused by resistant microorganisms are suspected, it is essential to collect adequate microbiological samples based on the clinical presentation and to process the samples in a microbiology laboratory for confirmation and for guiding the appropriate antimicrobial treatment. These treatment regimens vary depending on the severity and location of the infection, as well as the underlying clinical conditions and the antimicrobial susceptibility testing results.

## **Infection prevention and control of healthcare-associated infections**

Adhering to infection prevention and control standards is critical for preventing the emergence and spread of infections caused by resistant microorganisms. Below is a summary of the key measures that should be implemented:

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<sup>2</sup> Available at: <http://antimicrobianos.com.ar/category/algoritmos-manuales-protocolos/>

- Ensure adequate hand hygiene (8).
- Implement the recommendations for the prevention of surgical wound infections (9).
- Clean, decontaminate, and sterilize all medical equipment and devices according to the current guidelines (10).
- Implement contact precautionary measures for patients infected as well as for persons colonized with resistant microorganisms.

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