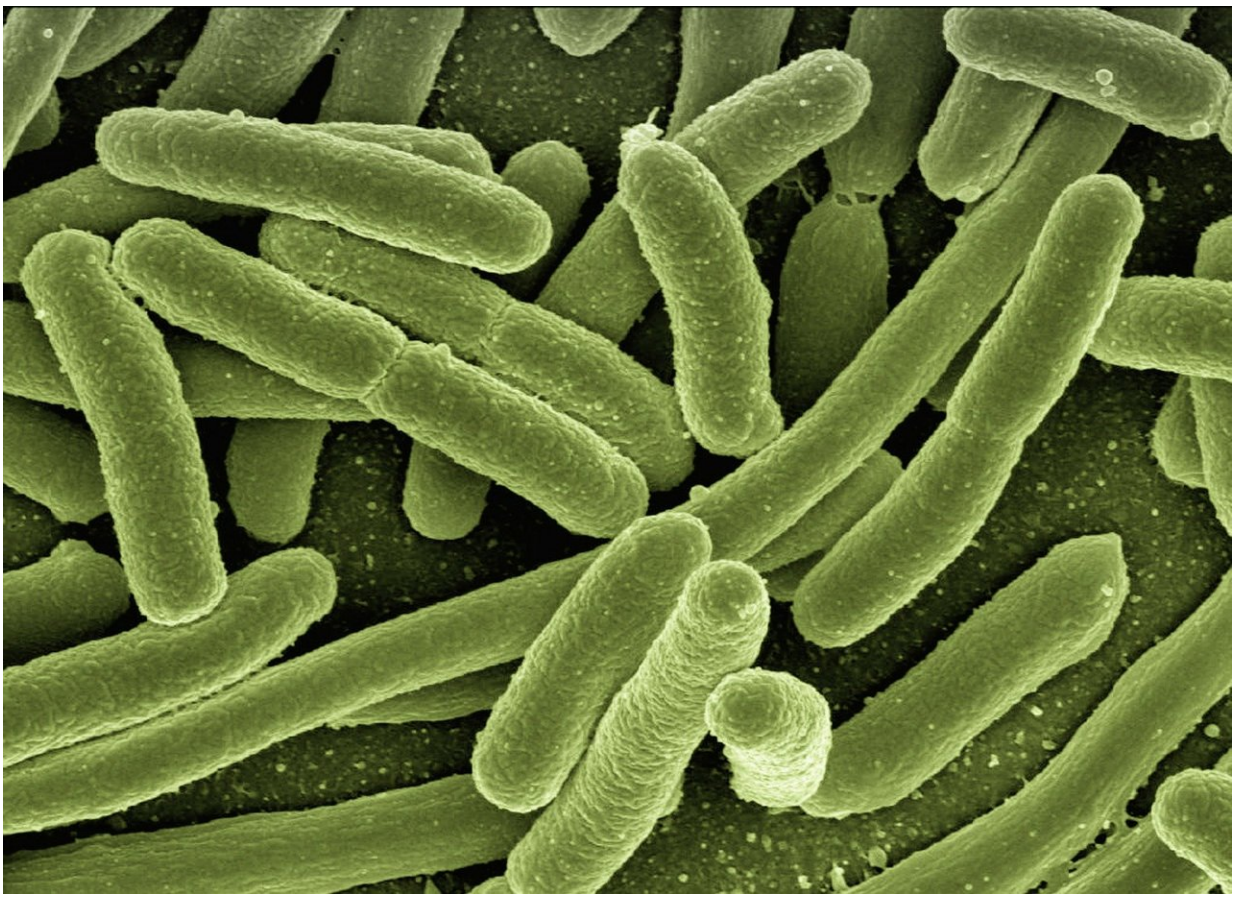
Staying in a hotel during travel to tropical regions is associated with contracting drug-resistant bacteria

April 15 2019



Credit: CC0 Public Domain

Staying in a hotel or private accommodation is associated with contracting and carrying home drug-resistant bacteria in travellers to low and/or middle-income countries (LMICs), according to new research being presented at this year's European Congress of Clinical Microbiology & Infectious Diseases (ECCMID) in Amsterdam, Netherlands (13-16 April). Younger travellers aged 20-30 years were also found to be at increased risk compared with those in other age groups.

This study of 230 people from Germany travelling to LMICs found that travellers who mainly stayed in a hotel or private accommodation had a four times higher risk in each case of returning home with multi-drug resistant bacteria in their gut than those who mainly stayed in other types of tourist accommodations like guest houses, hostels, or camping.According to the authors, the study is the first to report staying in a hotel as a risk factor for colonisation with extended-spectrum beta-lactamase producing Enterobacteriaceae (ESBL-PE), which are resistant to multiple antibiotics.

"Previous studies had already reported this for staying in a private accommodation, but it was unexpected that hotel might also be a risk factor," says co-author Dr. Lynn Meurs from the Robert Koch-Institute, Berlin, Germany. "Colonisation in itself does not lead to any health problems. However, there is a risk of infection with bacteria that patients are colonised with, especially in hospitalised patients. Should that occur with extended-spectrum beta-lactamase producing Enterobacteriaceae, these infections such as urinary tract infections, pneumonia, and sepsis, may be more difficult to treat than infections with bacteria that are susceptible to standard antibiotics."

As the study did not set out to investigate the effect of a hotel stay on ESBL-PE colonisation, further studies are needed to assess whether the surprising association between hotel stay and ESBL-colonisation is

indeed reproducible, and to better assess what factors may cause such an association, researchers say.

To investigate how intercontinental travel impacts the spread ESBL-producing bacteria, Meurs and colleagues from a joint project of the Leipzig University Hospital and the Robert Koch Institute in Berlin, Germany, studied risk factors for intestinal ESBL-PE colonisation in 230 people attending a travel clinic at the Leipzig University Hospital, Germany, before travelling between March 2016 and March 2017.

The researchers collected stool samples for testing from participants before and after they travelled outside Germany. All travellers completed questionnaires on risk factors including the countries they visited, length of time in country, type of residence, symptoms, antibiotic treatment, healthcare use, diet, and hygiene.

Modelling was used to identify risk factors for travel-associated ESBL-PE colonisation. Seven travellers who tested ESBL-PE-positive before travel were excluded from the analyses.

Results showed that around 1 in 5 travellers (23%; 53/230) contracted ESBL-producing bacteria during their trip abroad.

People travelling to either Western, Southern or Eastern Asia faced the highest risk of contracting the resistant bacteria—they had a four times higher risk of being colonised with ESBL-producing bacteria than those who visited other LMICs in tropical and subtropical regions.

The data also showed that people who stayed in a hotel, or in private accommodation were in each case four times more likely to contract ESBL-producing bacteria than those staying in a residence like a hostel, guest house or camping.

The risk of ESBL-PE colonisation also varied with age, with travellers aged 20-30 years at a five-times increased odds of contracting drug-resistant bacteria compared to travellers aged 50 years and over. The authors suggest that is most likely because people aged 20-30 years in this study travelled longer than travellers from other age categories. As such, they may have been exposed longer to ESBL-PE and therefore have a higher risk of returning home colonised.

"Many people visit low- and middle-income countries in tropical and semi-tropical regions every year. With around 20% of travellers returning positive for these resistant bacteria, our findings reconfirm that intercontinental travel, especially to already known high risk areas, likely contributes to their global spread", says Dr. Meurs.

"We therefore recommend raising awareness in returning (high-risk) travellers. They should know that 1) they may be carrying drug resistant bacteria in the weeks after travel and 2) how they can effectively prevent the spread to other persons, for example through adequate hand hygiene."

This observational study in one travel clinic cannot prove that the type of accommodation causes colonisation with ESBL-producing bacteria, but only suggests the possibility of such an effect. The authors point to several limitations including that the study was not sufficiently powered to detect other risk or protective factors for travel-associated ESBL-PE acquisition, and that travellers attending a travel clinic may not be representative for all people travelling to the tropics.

Provided by European Society of Clinical Microbiology and Infectious Diseases

Citation: Staying in a hotel during travel to tropical regions is associated with contracting drug-