Medical Xpress

New Study finds Middle East set to wage a war against superbugs

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(Medical Xpress)—University of Queensland researchers warn the Middle East Gulf States are facing a rapid growth in superbugs due to the overuse of antibiotics, poor hand-hygiene in hospitals and medical tourism.

With more than 15,000 expatriate Australians living and working in the United Arab Emirates alone, the rise of potentially deadly superbugs (antibiotic resistant bacteria) in the region is of international concern.

UQ Centre for Clinical Research PhD candidate Hosam Mamoon Zowawi and his advisor, Professor David Paterson, have collaborated with international researchers to lead the first systematic literature review of antibiotic-resistant bacteria in the Gulf Cooperation Council (GCC) states of Saudi Arabia, United Arab Emirates, Kuwait, Qatar, Oman and Bahrain.

The study found a particular strain of potentially deadly superbugs – carbapenem-resistant bacteria, which kills up to half of infected patients – has increased up to 90 per cent over the past two decades.

Mr Zowawi said the study identified unique risk factors that could have contributed to the rise and spread of hospital- and community-acquired infections across the GCC states, with the unnecessary use of antibiotics standing out as a particular risk.

"Superbugs are born and grow from the irrational use of antibiotics and

it's clear from our research that active guidelines must be implemented to restrict their use in the GCC region," Mr Zowawi said.

"Although non-prescription sales of antibiotics are illegal in the GCC states, 68 per cent of pharmacies in Abu Dhabi, 78 per cent in Riyadh and 87 out of 88 pharmacies included in a study in Saudi Arabia had sold antibiotics to patients unnecessarily and/or without a prescription.

"Furthermore, 75 percent of patients who received antibiotic treatment in the intensive care unit of a Qatar hospital in 2004 did not have a microbiologically-proven infection."

Researchers also found that poor hand-hygiene compliance in hospitals and the region's large population of migrant workers could have also contributed to the spread of antibiotic-resistant bacteria.

Mr Zowawi, who received a full scholarship from the government of Saudi Arabia to pursue PhD studies at the UQ Centre for Clinical Research, said intervention methods are desperately needed to combat the medical disaster facing the GCC states.

"Our recommended management strategies for combating superbugs in the GCC region begin with implementing an antimicrobial stewardship program in health care facilities to reduce over-prescription, shorten hospital stays, and reduce costs," Mr Zowawi said.

"Improving basic infection control precautions like hand-hygiene, and prohibiting the availability of antibiotics without a prescription should also be mandatory, particularly in conjunction with a mass education campaign about antibiotic use."

Professor Paterson, who leads the Centre for Clinical Research Infection and Immunity group, said Mr Zowawi is working with multiple

laboratories and companies to design, test and validate innovative diagnostic tests for rapidly identifying antibiotic-resistance in bacteria.

"We have developed the first GCC-wide network of collaborating hospitals and institutes to study superbugs in the region, which we hope will expand toward developing an ongoing surveillance project for antibiotic-resistant bacteria," Professor Paterson said.

"Better diagnostic methods, in conjunction with up-to-date regional surveillance data, would improve the targeted use of antibiotics for physicians and could save lives by helping microbiologists track outbreaks around the world," he said.

The research findings are published in this month's *Clinical Microbiology Reviews* journal.

Provided by University of Queensland

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