

Rats pose health threat to poultry and humans, study says

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Chelsea Himsworth is an assistant professor in the UBC School of Population and Public Health and leader of the Vancouver Rat Project. Credit: Chelsea Himsworth

Rats can absorb disease agents from their local environment and spread them, according to a new UBC study. The results also indicate that the threat rats pose to the health of poultry and humans has been underestimated.

Researchers studied the feces of rats caught at an Abbotsford, B.C. poultry farm, and discovered they all carried avian pathogenic *E. coli*, a bacteria with the ability to cause disease in chickens and potentially humans. More than one quarter of the rats were carrying multidrug resistant strains of the bacteria. The findings support lead author Chelsea Himsworth's theory that rats act as a "pathogen sponge," soaking up bacteria from their environment.

"If rats can absorb pathogenic *E. coli*, then they could potentially be a source of all sorts of other pathogens that we have not anticipated," said Himsworth, assistant professor in the UBC School of Population and Public Health and leader of the [Vancouver Rat Project](#), a group aiming to address the knowledge gap about the health threats associated with rats.

Himsworth was surprised to find that the *E. coli* strains carried by the farm rats were very similar to those found in chickens, and totally different from *E. coli* strains found in urban rats. "Basically, the rural rat gut looked like the poultry gut, and nothing like the urban rat gut," she said.

This latest study follows previous research by Himsworth that found human pathogens, including MRSA (methicillin-resistant *Staphylococcus aureus*) and *C. difficile*, in the feces of [rats](#) in Vancouver's Downtown Eastside.

"Rat infestations ought to be taken seriously," said Himsworth. "They need to be tackled with an educated, informed approach in collaboration with scientists and pest control professionals. Eventually, we would like to see the development of municipal programs for managing rat infestations and rat-related issues in B.C., similar to what is currently in place in U.S. cities like New York."

More information: "Avian pathogenic and antibiotic resistant E. coli in wild rats" will appear in the *Journal of Wildlife Diseases* in April.

Provided by University of British Columbia

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