

Hypervirulent strep outbreak identified

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The Translational Genomics Research Institute (TGen) has helped state, local and tribal health officials identify an outbreak of "hypervirulent" strep bacteria in the American Southwest.

Identified in Flagstaff, Ariz., from January to July 2015, this [outbreak](#) of the emm59 clone of group A Streptococcus is directly related to cases identified recently in New Mexico. This strain type appears to have evolved from a nationwide outbreak in Canada that lasted from 2006-09, according to a report in the April issue of *Emerging Infectious Diseases*.

"The presence of emm59 in the southwestern United States poses a public health concern," said Dr. Paul Keim, Director of TGen's Pathogen Genomics Division (TGen North) in Flagstaff, and the senior author of the report.

Group A strep is what commonly causes [strep throat](#) and sometimes can cause invasive [skin infections](#). This emm59 type of strep appears to more predominantly cause sever skin infections and fever that can present as necrotizing fasciitis, also known as flesh-eating bacteria, which can cause the loss of limbs and even death.

Using advanced genomic sequencing, TGen investigators were able to track isolates of emm59 throughout northern Arizona, and link it to cases in New Mexico and elsewhere, as part of the strain that came out of the Canada epidemic.

"When compared with all other publically available U.S. emm59 isolate

genomes, a significant number of Flagstaff cases had group A strep strains that were identical. This tells us that we have an outbreak of this particularly nasty superbug," said Dr. David Engelthaler, Director of Programs and Operations at TGen North, and the lead author of the study.

In conducting the analysis of this strep outbreak during the past year, TGen worked closely with doctors and epidemiologists at Northern Arizona Healthcare, the Arizona Department of Health Services, the Coconino County Public Health Services District, Northern Arizona University, and the Navajo Nation Division of Health.

"Epidemiologic investigations are ongoing in Arizona to further determine the extent of the current [strep](#) outbreak, and to help minimize it's spread, especially to at-risk populations," said Dr. Engelthaler, who also is a TGen Associate Professor and Arizona's former State Epidemiologist.

In addition, efforts are being made in education and outreach in Arizona especially among homeless and jail populations, which the study identified as vulnerable to this outbreak.

More information: Hypervirulent emm59 Clone in Invasive Group A Streptococcus Outbreak, Southwestern United States.

wwwnc.cdc.gov/eid/article/22/4/15-1582_article

Provided by Translational Genomics Research Institute

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