

## New superbug strain behind Pakistan's typhoid outbreak: study

Lab technicians testing for the presence of bacteria. | Photo Credit: [REUTERS](#)

An outbreak of typhoid fever in Pakistan is being caused by an extensively drug resistant "superbug" strain, a sign that treatment options for the bacterial disease are running out, scientists said on Tuesday.

Researchers from Britain's Wellcome Sanger Institute who analysed the genetics of the typhoid strain found it had mutated and acquired an extra piece of DNA to become resistant to multiple antibiotics.

An outbreak of drug-resistant typhoid that began in Hyderabad in Pakistan in November 2016 is still spreading, according to experts from Aga Khan University in Pakistan who worked with the Sanger team. Official data on case numbers and deaths are not available, but local Pakistan media reports say health authorities detected more than 800 cases of drug-resistant typhoid in Hyderabad alone in a 10-month period between 2016 and 2017.

The researcher found the bacterial strain causing the outbreak is now resistant to five antibiotics in total, more than seen in any outbreak before. "This is the first time we have seen an outbreak of extensively drug-resistant typhoid," said Elizabeth Klemm, who co-led the analysis work at the Sanger Institute. "This outbreak was caused by a multidrug-resistant strain that had gone a step further and acquired an extra piece of DNA encoding additional genes for antibiotic resistance."

Typhoid is a highly contagious infection caused by the *Salmonella enterica* serovar Typhi bacteria. It is contracted by consuming contaminated foods or drinks and symptoms include nausea, fever, abdominal pain and pink spots on the chest. Untreated, it can be fatal.

Scientists at Aga Khan University anxious to find ways to tackle an ongoing outbreak there contacted the Sanger in the spring of 2017 and asked scientists there to genetically analyse samples.

The team found it was being caused by a strain known as H58, which is already known to be linked to drug-resistant cases. Looking further, they found this H58 strain had gained an extra strand of bacterial DNA a plasmid that encoded for additional antibiotic resistance genes. The study's results were published in the scientific journal *mBio*.

Charlie Weller, head of vaccines at Britain's Wellcome Trust global health charity, said the findings were a clear warning that "treatment options for typhoid are running out" and focussing on prevention was now vital.

A new vaccine against typhoid was approved last month by the World Health Organization and the GAVI global vaccine alliance said last year it had earmarked \$85 million to help support the introduction of typhoid vaccines in poor countries.

Previous research by Sanger scientists published in 2015 found that the H58 strain of typhoid first emerged in South Asia 25 to 30 years ago. It initially took hold in Asia and Africa before spreading around the world, becoming the dominant strain by 2015.

Receive the best of The Hindu delivered to your inbox everyday!

Please enter a valid email address.

END

Downloaded from [crackIAS.com](http://crackIAS.com)

© **Zuccess App** by [crackIAS.com](http://crackIAS.com)

crackIAS.com