Extreme flooding can up exposure to pathogens

September 15 2018

(HealthDay)—Extreme flooding, such as was seen in Hurricane Harvey,

can increase exposure to pathogens, according to a research letter published recently in *Environmental Science & Technology*.

Pingfeng Yu, Ph.D., from Rice University in Houston, and colleagues surveyed microbial communities in floodwater inside and outside residences, bayou water, and residual bayou sediment collected immediately post-flood in Houston following Hurricane Harvey.

The researchers found that based on six-month post-flood monitoring, *Escherichia coli* levels were elevated in bayou water samples compared with historical levels, as were relative abundances of key indicator genes of anthropogenic sources of antibiotic resistance. Indoor floodwater had more abundant gene markers corresponding to putative pathogenic bacteria compared with street floodwater and bayou water. In indoor stagnant waters, there were also higher abundances of 16S rRNA and *sul1* genes. In both residential areas and public parks, sediments mobilized by floodwater exhibited an increased abundance of putative pathogens post-flood.

"Overall, the epic flooding caused by Harvey temporarily shifted the local microbial landscape, increasing the levels of gene markers for pathogenic bacteria, multiantibiotic resistance, and its extent of dissemination in the flooded areas," the authors write. "Our results demonstrate that the elevated abundance of microbial contamination in stagnant indoor floodwaters and sediments increases the potential level of exposure of residents and relief workers in the aftermath of extreme floods."

More information: Abstract/Full Text (subscription or payment may be required)