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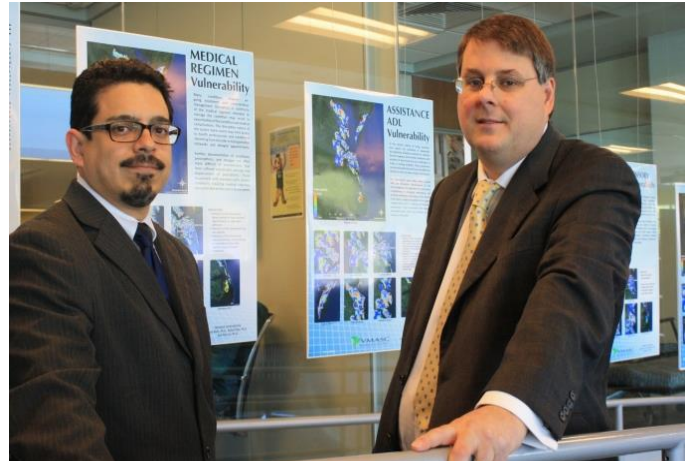
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Pediatric Asthma – Another Negative Outcome of Recurrent Flooding, ODU Researchers Find

June 11, 2021

A study underway by Old Dominion University researchers indicates that pediatric asthma is yet another negative outcome for a region - such as Hampton Roads - that is susceptible to recurrent flooding.

The fact that incidences of asthma in extremely young children is especially acute in economically challenged neighborhoods should "ring alarm bells," said study co-lead author Joshua G. Behr, ODU associate vice president for strategic initiatives.



Rafael Diaz, left, and Joshua G. Behr are the co-lead researchers for the study.

The findings are emerging as part of a broader study by the Commonwealth Center for Recurrent Flooding Resiliency (CCRFR) of the myriad effects on quality of life caused by recurrent flooding. ODU co-lead researcher Rafael Diaz, Advanced Analytics Research Lab director within ODU's Virginia Modeling, Analysis and Simulation Center, asked residents of Portsmouth to report prevalence of asthma symptoms and risk factors. Diaz found that nearly 25% of the households surveyed were identified as having a member who currently has been diagnosed with asthma, and that figure is almost one-third for households with incomes of less than \$25,000 per year.

"Hampton Roads' prevalence (of pediatric asthma) is above the state average. Portsmouth's prevalence is off the charts. Prevalence within Portsmouth within low-income households is in the stratosphere," Behr said. "It is unconscionable that this is going on."

The risks associated with pediatric asthma are exacerbated by risk factors connected to recurrent flooding, the ODU researchers surmise. Portsmouth residents who have suffered damage to their dwellings or have had their ability to get in and out of their neighborhood frustrated by recurrent flooding in the past year report higher incidences of pediatric asthma.

The need for more frequent emergency medical treatment for episodic asthma events may also stem from the "trifecta" of health risk factors that target low-income neighborhoods, Behr said.

"Beyond access and management, these households tend to live in older housing stock, report frequent flooding near the home and report the presence of mold and mildew," he said. "So, environmental conditions related to recurrent flooding may be contributing triggers for asthma."

Behr said the data collected should act as a "wakeup call" concerning the disparate impacts of recurrent flooding on coastal populations, particularly on low-income households. Behr likens it to a "slow cook" threat to neighborhoods at risk of recurrent flooding. "For some low- and moderate-income neighborhoods, it truly is a catastrophe that rivals, if not surpasses, in costs, a single severe weather event," he said.

"We spend a lot of time visioning and preparing for a hurricane, and rightly so," Diaz added. "But in contrast, we don't spend nearly enough time recognizing the threat, in real time and over time, of the recurrent flooding that is taking place under our noses."

Established in 2016, the Commonwealth Center for Recurrent Flooding Resiliency engages the expertise, resources, and intellectual vibrancy of the College of William & Mary and Old Dominion University in support of building resilience to rising waters.

The CCRFR conducts studies, provides training and offers a variety of services in the area to local governments, state agencies, industries and citizens of the commonwealth..

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