

Syndromic surveillance of tool-related injuries due to Hurricane Helene clean-up efforts in North Carolina



CONTRIBUTOR: *Meredith Luner, MPH, Surveillance Epidemiologist, Injury and Violence Prevention Branch, Division of Public Health, North Carolina Department of Health and Human Services*

CATEGORY: **Syndromic Surveillance**

The North Carolina Department of Health and Human Services' (NCDHHS) Injury and Violence Prevention Branch conducted surveillance of injuries after Hurricane Helene, which caused massive mudslides, building destruction, and power outages in western North Carolina in late September 2024.

The “What”

The North Carolina Department of Health and Human Services (NCDHHS) hypothesized that an increased number of North Carolinians would sustain injuries from tools associated with clean-up efforts, such as chainsaw lacerations, from clearing fallen trees. To monitor the impact of the storm related to these injuries, they created a syndromic definition for tool-related injuries using NC DETECT, North Carolina's statewide syndromic surveillance system, and applied this definition to emergency department visits in the 27 affected western North Carolina counties.

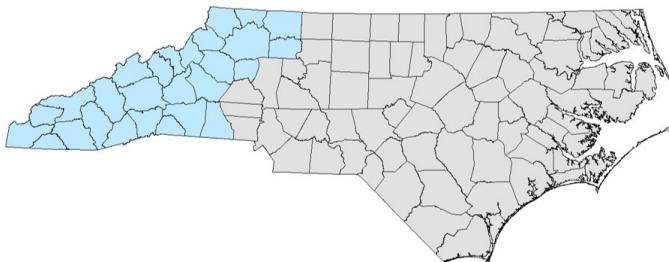


Image Source: NCDHHS Injury and Violence Prevention Branch



More stories are available at stories.cste.org

SUBMITTED AUGUST 2025



During this period in 2023, 35 visits matched NCDHHS' definition, but that number rose to 155 visits after the hurricane in 2024, representing a 343% increase.

The “So What”

Hurricanes are an annual threat to North Carolina, and Hurricane Helene brought catastrophic damage to the western part of the state. With NCDHHS' final syndromic definition, they looked at excess injuries in the 45-day period after Hurricane Helene hit land in 2024 compared to the same time in 2023. During this period in 2023, there were 35 visits matching the definition, but that number rose to 155 visits after the hurricane in 2024, representing a 343% increase. This demonstrates a large increase in residents sustaining injuries from tools during hurricane clean up. Leveraging syndromic surveillance allowed NCDHHS to quickly monitor the injury landscape in the wake of a hurricane. The new syndromic definition will be leveraged during future disasters to guide injury prevention efforts in hard-hit areas.



This Photo by Unknown Author is licensed under CC BY-SA

The “Now What”

NCDHHS plans to use this definition in future disasters and for routine monitoring throughout the year to inform prevention efforts. If increases in tool-related injuries are noted in the future, and prior to any future mass clean up effort, the department can disseminate prevention materials

and tips on equipment safety to help prevent injuries in North Carolina. NCDHHS plans to implement this definition in NSSP ESSENCE by working with the syndrome definition committee so other states can monitor for these injuries as well.

Key contributors to this project include: Katherine McDaniel, MPH; Hyunwoo Do, MPH; Maria Del Mar Blanes-Garcia, MPH; Anna Giudici, MPH; Scott Proescholdbell, MPH; Allison McElroy, MPH; Lana Deyneka, MD, MPH; Neha Shanker, PhD, MPH; Amy Ising, PhD; Anna Waller, ScD; Gloria Stallworth, BSW; Sara Smith, MA, MCHES; Zack Moore, MD, MPH



Funding source: This work was supported in part by the Centers for Disease Control and Prevention (CDC) cooperative agreement #NU38PW000005. Its contents are solely the responsibility of the authors and do not necessarily reflect the views of the CDC.