

Hurricane Maria killed 4,600 in Puerto Rico, 70 times official toll: study

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A man walks past destroyed homes in Catano, Puerto Rico, on September 21, 2017 in the wake of Hurricane Maria

Hurricane Maria, which pummeled Puerto Rico in September 2017, is likely responsible for the deaths of more than 4,600 people, some 70 times more than official estimates, US researchers said Tuesday.

The government-provided death toll stands at just 64, but experts say an accurate count was complicated by the power outages and widespread devastation wreaked by the storm, which caused \$90 billion in damage and is ranked as the third costliest cyclone in the United States since 1900.

Earlier independent investigations had put the true toll at closer to 1,000.

But the latest estimate, compiled by researchers at Harvard University, came back far higher—at 4,645 deaths from the day of the storm, September 20, until December 31, 2017.

For comparison, the death toll from 2005's Hurricane Katrina—the costliest hurricane in US

history—was far lower, estimated at 1,833.

Most deaths after Hurricane Maria hit Puerto Rico are blamed on interruptions in medical care due to power outages and blocked or washed out roads, said the report published in the *New England Journal of Medicine*.

"Approximately one-third of post-hurricane deaths were reported by household members as being caused by delayed or prevented access to medical care," said the report.

"We have always expected the number to be higher than was previously reported," said Carlos Mercader, director of Puerto Rico's Federal Affairs Administration.

The island's administration commissioned another study to be carried out by George Washington University into the death toll, which will be released soon, Mercader said.

"Both studies will help us better prepare for future natural disasters and prevent lives from being lost," he said.

Methodology

Researchers went door-to-door at 3,299 homes randomly selected from across the US territory, home to some 3.3 million people.



A flooded highway in San Juan, Puerto Rico on September 21, 2017, in the immediate aftermath of Hurrigan Maria (above), and six months after the passing of the storm (below), which reseachers now blame for the deaths of 4,600 people—more than 70 times higher than the official toll given by the US government

Survey-takers used criteria from the US Centers for Disease Control and Prevention to determine if a person's death could be blamed on the hurricane.

By definition, this could be either forces related to the event such as flying debris, or unsafe or unhealthy conditions in the three months afterward, including loss of necessary medical services.

The surveys were taken from January to February 2018, a time when, researchers noted, "many survey respondents were still without water and electricity."

To avoid bias, people were not paid for their

responses, and were informed that their answers would not gain them any additional government aid.

If a family member was reported missing but not known to be deceased, researchers counted them as alive.

The data showed a 62 percent increase in the mortality rate in the aftermath of Hurrigan Maria, compared to the same period a year earlier, corresponding to a total of 4,645 deaths.

Even this is believed to be a "substantial underestimate" of the actual death count, said the report, noting it could be above 5,700. It said this was because no one could answer the survey questions for those people who had been living on their own and died during the storm.

"Our estimates are roughly consistent with press reports that evaluated deaths in the first month after the hurricane," it added.

"On average, households went 84 days without electricity, 64 days without water, and 41 days without cellular telephone coverage," the report added.

Researchers said they were unable to compare their estimates with the latest government count, because their request for access to those figures was denied.

The government of Puerto Rico stopped publicly sharing its data on hurricane deaths in December 2017.

"These numbers will serve as an important independent comparison to official statistics from death registry data, which are currently being re-evaluated, and underscore the inattention of the US government to the frail infrastructure of Puerto Rico," concluded the report.

More information: Nishant Kishore et al, Mortality in Puerto Rico after Hurricane Maria, *New England Journal of Medicine* (2018).

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