

Researchers investigate drowning deaths of migrants after US-Mexico border wall height increase

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In the four years after the border wall height was increased from 17 feet to 30 feet along the US-Mexican border, drowning deaths of migrants in

the Pacific Ocean off the coast of San Diego increased by 3200%, according to a new study [published](#) in *JAMA*.

Co-authors Anna Lussier, M.D, Ph.D. student in the University of California San Diego School of Medicine, and Peter Lindholm, M.D., Ph.D., Gurnee Endowed Chair of Hyperbaric and Diving Medicine Research and professor in residence in the Department of Emergency Medicine at UC San Diego School of Medicine, hypothesized that the change in wall-height may have resulted in an increase in marine and maritime migration attempts, resulting in more frequent drownings.

The study relied largely on publicly available data from the Missing Migrants Project (MMP), an initiative of the International Organization for Migration (IOM), which coordinates the UN network on migration and compiles data on migrants, refugees, and asylum seekers who die during migration journeys.

The researchers analyzed MMP data across two 4-year periods: 2016–2019, before the 30-foot wall was completed, and 2020–2023, after construction was finished. They categorized deaths according to the body of water in which they occurred—the San Diego region of the Pacific Ocean; canals; and other bodies of water, such as lakes, streams, or drainage ditches. These were compared against drowning rates in the Rio Grande, where the wall is largely absent.

Contrasting before-and-after rates, drowning in the San Diego region of the Pacific Ocean rose from 1 in the four years prior to the wall height change to 33 in the four years after, a net increase of 3200%. In canals, that figure rose from 49 to 64 drownings, an increase of 30.6%, and in other bodies of water, from 15 to 35, an increase of 133.3%. Along the Rio Grande, those numbers remained relatively stable across both periods, with 97 drownings prior to 2020, and 96 drownings after, for a net decrease of 1.03%.

Lindholm explains, "Looking at the numbers, you can see that it's about the same in the Rio Grande, and it's a little more but not extraordinarily more in the ditches and canals. We don't have absolute data on how many people migrated, but if the number of drownings was related to the rate of migration, you would probably have a similar increase at all places."

The impetus for the paper came when Lussier discovered an information gap on migrant drowning deaths. She and Lindholm had been looking into the occupational health of people who work in the maritime environment in San Diego, such as lifeguards exposed to pollution and marine contamination.

"The lifeguards showed us a presentation on migrant rescues they were performing because of potential human smuggling," said Lussier, who is also a doctoral student at UC San Diego Herbert Wertheim School of Public Health and Human Longevity Science, whose Ph.D. studies focus on global public health. "Their stories weren't showing up in the news, and the numbers struck me as odd."

To fill the information gap, Lussier searched government datasets for data on marine migration and migrant drowning death. The data she was looking for was not readily available and often lacked critical factors, such as the baseline number of people who tried migrating—what Lussier refers to as "the missing denominator."

Lussier eventually chose the MMP, which records the date and coordinates of each drowning and the number of people who drowned. That enabled her and Lindholm to compile a snapshot of migrant drowning deaths before and after the wall was augmented.

Maritime migration is a growing public health issue, and both Lussier and Lindholm feel that their unusual collaboration, which marries global

public health with marine and undersea medicine, gives them a [unique perspective](#) that will enable them to make innovative contributions to the field.

They're currently working on a more granular view of their before-and-after picture, teasing apart the numbers to discern their meaning in greater detail. For instance, "drowning" is a bit of a gray zone, said Lindholm. "Drowning is the endpoint of death in the water, but we're trying to determine the actual cause of death: hypothermia? Hypoxia? Swimming-induced pulmonary edema?"

Lussier says they want to expand their dataset to multiple regions and other factors that may be involved, such as weather and water temperature. "Are more people drowning at a certain time of year, for instance? Can other sources give us information about the missing denominator of how many people tried migrating? Basically, we have this one data point, and now we want to understand what's happening beyond this simple change in numbers."

One of their end goals is to understand better medical outcomes among migrants who survive drowning, such as infections from contaminated water and lung injuries—even impacts on mental health. The scientists are also hoping to provide data that can inform decision-making for policymakers and EMS systems, as well as those who provide medical care to migrants who survive marine migrations.

More information: Anna Lussier et al, Rate of Aquatic and Maritime Drowning Deaths After US-Mexico Border Wall Height Increase, *JAMA* (2024). [DOI: 10.1001/jama.2024.1275](https://doi.org/10.1001/jama.2024.1275).
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