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Last year's record-breaking power outages are a red flag for public health

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As power outages worsen across the country, experts are sounding the alarm about the potentially catastrophic impacts on human health.

Last week, the Energy Information Administration [reported](#) that the average person in the US spent over eight hours without power in 2020 — the worst year for outages in records going back to 2013. Some of those outages were deadly: dozens of people died in Louisiana in the aftermath of Hurricane Ida, which knocked out power just before a [heat wave](#), while hundreds of people [were killed in Texas](#) during a blackout triggered by a deep freeze. But there are also more subtle ways electricity intersects with health, like if people with underlying health conditions are put in stressful, too-hot environments that exacerbate problems, or if refrigerated medications are spoiled during a blackout. All of these risks have public health experts worried by the fact that people in the United States seem to be spending more time without electricity due to extreme weather.

“From a health perspective, this is really concerning,” says Joan Casey, an environmental epidemiologist at Columbia University Mailman School of Public Health.

Health is linked to power in a [number of ways](#). Some are clear cut, like if a person relies on a ventilator to breathe or if people get carbon monoxide poisoning from running a generator incorrectly. Others are harder to tease apart, Casey says. People with heart disease might have a heart attack after a power outage knocked out the heat for a few hours, but it's difficult to conclusively say that the heart attack only happened because of the disruption.

Most research on the health impacts of power outages has focused

on hospitalizations after a major event, like the Texas freeze this year, or a citywide blackout in New York City in 2003 that left people without power for around 30 hours. Research [on that particular New York City outage](#), for example, showed that hospitalizations for kidney and respiratory problems went up. So did overall deaths.

But there's been less work done to understand how shorter, more sporadic outages — which could add up over the course of a year — harm health.

“We haven't done as well looking at, for example, Maine, where power is going out all the time through the winter,” Casey says.

Last week's report showed that [Maine had the highest number](#) of total outages, and residents spent an average of around 30 hours without power. There hasn't been extensive analysis linking cold-related deaths in Maine to the constant blackouts, Casey says. Intermittent but frequent times without heat could build up to create a health problem, but it would be hard to quantitatively prove a link. “I'm certain that there would be some attributable mortality, but that's the kind of thing that we would miss,” Casey says.

Casey also suspects that the COVID-19 pandemic meant the hours when the lights were off during 2020 were worse for our health than they might have been another year. People spent more time at home, so they could have spent longer stretches inside without heating or cooling. They might have avoided going to other people's houses who *did* have power out of COVID-19 fears. “People had fewer places to go,” Casey says. “It would be safe to say the pandemic would exacerbate issues linking power outage to health.”

Experts have a pretty good understanding of the baseline levels of illness and death linked to large power outages, which they can track through hospitalization data in the aftermath of a major incident. But there hasn't been extensive work done to calculate the relationship between shorter, frequent power outages and rates of death or disease. Because those types of issues haven't typically been included in research, Casey suspects any estimates right now about the health risks of blackouts — which just focus on acute, emergency incidents — are probably undercounts.

Casey hopes researchers do more to dig into that question going forward. It's likely possible, for example, to figure out how many extra deaths happen in an area as the length of time without power goes up. It's important to develop a more complete understanding of the problem because power outages are expected to continue —

and to get worse — as climate change-fueled disasters escalate and the US grid keeps aging. Shoring up the infrastructure that keeps the lights on, then, is a critical public health undertaking, one that is getting some [much-needed attention](#) following the recent passage of a bipartisan infrastructure bill by Congress.

At this point, it'd be a major challenge to keep people as healthy as possible without reliable access to electricity. Building structures that are less reliant on heating and cooling systems to maintain a constant temperature could help. But most medical equipment needs electricity. Ideally, the renewable energy transition will include efforts to promote local electricity generation and backup power systems that help keep power flowing to support critical medical needs, even if major weather events disrupt the larger grid.

“Hopefully we become more resilient as the climate continues changing, rather than this all getting worse,” Casey says.