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2019 Polar Vortex: A Case Study

Introduction

The Polar Vertex of 2019 hit record-low level temperatures across the U.S. Midwest. Temperatures as low as -23 Fahrenheit were recorded in Chicago, forcing school closures, flight cancellations, and impacting electricity and water services.[1] The vortex took the lives of over 21 individuals across the nation. Many of those who passed away were discovered outside seeking shelter, and some died while shoveling snow or from a lack of heat in their homes.[2]

Facts of the case

The Polar Vortex of 2019 hit the United States in the months of late January and early February, making it one of the coldest winters on record. The Midwest felt the most impact. Meteorologist Andrew Oresion discovered that International Falls, Minnesota had wind chills recorded at -55F. At the same time, the South Pole had a temperature of -24F with wind chills, making Minnesota colder than the South Pole.[1] As schools, businesses, and postal services faced closures, hospitals faced an increase in patients. Over 21 individuals passed away due to the cold temperature that impacted the nation. A university student passed away at the University of Iowa who was found behind a university building, it was presumed he was trying to seek shelter from the cold.[2] Many individuals passed away due to staying a prolonged period of time outside, car accidents, and a lack of heat inside their homes.[2] Those who were sent to hospitals were treated for frostbite and cold-related injuries.

In the first few days of the vortex over 200 people were treated for injuries in Minnesota as stated by Hennepin Healthcare. The vortex impacted the water, electricity, and major transportation services. In a video posted by CBS News, it can be seen that transit workers are setting the tracks on fire to help keep the train moving in Chicago.[2] In Detroit, over 24 water mains located five to six feet underground froze due to the cold temperatures.[2] The frozen water impacted residents leaving them without running water. The vortex racked up a total economic loss of hundreds of millions of dollars.[3] This loss comes from the increase in closures seen in schools, businesses, museums, insurance claims related to ice flooding damages, transportation, and an increase in heating oil/gas.[4]

Epidemiological aspects of the event

Unfortunately, I was unable to find much information regarding the epidemiological aspects of the event. The Arctic polar vortex is a band of very strong winds that come together around 10 to 30 miles above the North Pole in the stratosphere. When the vortex is stable the winds move in a counterclockwise direction altogether. When disrupted the circle polar jet stream splits into two which leads air to travel down into mid-latitudes.[5]

Management of the event

The Midwest is an area accustomed to dealing with very cold temperatures. Hospitals in Minnesota saw an increase in admissions for cold-related injuries such as frostbite.[2] It is difficult to say how effective each hospital operated in the Midwest during this time, especially with handling more patients with cold-related injuries. It can be said that these locations understood

what these cold temperatures could entail, as they are very used to seeing these types of cases. A gap in preparedness that was seen was a lack of shelter beds for those who were homeless. In Lansing, Michigan, many of the shelters were overcrowded and had few beds for all those who needed one. In cities across the nation, many churches, schools, and government buildings were used as warming shelters.[1]

One good samaritan paid for a group of 70 homeless people's hotel rooms. The group was sleeping outside in tents and using propane tanks to keep warm. This samaritan was one of many during this time who offered to help their community. Policymakers and government officials needed to set up and create better shelters regardless of the weather. A lack of shelters around the country is a growing concern. As temperatures reach an all-time low people need access to better shelter options to assist them during these times of emergency.

Communication of the event

The Midwest region of the United States is accustomed to dealing with cold temperatures and heavy snowfall. Major news outlets in the area kept viewers informed on the updated weather conditions, temperatures, and snowfall amounts.[6] The National Weather Service issued an advisory in the regions of the Midwest and surrounding areas. Public health departments partner with major news outlets to inform viewers on key ways to stay warm and safe during this dangerous period.[6] They advised viewers to stay inside, wear layers, and to spend as little time outside as possible. Travel advisories were also in place as hundreds of flights and trains were canceled.

Once the vortex moved and individuals began to return to their normal routines, news outlets and public health officials advised people to check their pipes and gave precautions to follow when driving on icy roads. The communication during and after the event was well managed. Officials advised on the dangers of the event and provided tips on how to stay safe during this time. As someone who lived in Syracuse, NY at the time, I recalled my university advising the students on this event days before it occurred. Even though I was not located in the Midwest region, the temperatures were still at record levels. Communication after the event is just as important as before and during. Having the information and knowledge on what to do when driving on icy roads is also crucial to ensure that individuals take the needed measures to drive safely.

Summary

In conclusion, the polar vortex impacted hundreds across the western part of the United States and the rest of the country. Cities in the United States experienced record-low temperatures that reached -23 F and wind chills colder than some parts of the South Pole. These record temperatures left many seeking shelter in overcrowded shelter homes and took the lives of 22 individuals. The below-freezing temperatures increased the need for emergency care due to frostbite and left many without running water. The management of the event could have been better if officials had taken into consideration the number of individuals who needed to seek shelter. The overcrowding and small amount of shelters is an area of concern policymakers and officials need to consider.

References

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