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America's Hurricane Preparedness is a Disaster Waiting to Happen

What would happen if a massive hurricane with life threatening storm surge, over 100 mile-per-hour winds, torrential downpours, and billions of dollars in potential damages came barreling towards your hometown? Would you be prepared? Would you know how to get to safety in order to save your life and the lives of others? Being adequately prepared for these dangerous, large-scale natural disasters should be taken more seriously as American citizens to not only protect valuable assets, but also to save lives.

The expression “out of sight, out of mind” applies perfectly to this problem. If it’s not an immediate threat or something that’s currently affecting a person, why should they waste their time worrying about it? Americans have fallen for this common trap too often when it comes to hurricanes. Results from a recent survey shows that 65% of American households do not have adequate plans and supplies ready for a natural disaster, and despite the recent increase in extreme weather events, this percentage has remained stagnant since 2011 (Earth Institute). Americans are forgetting about the past too quickly, since, despite seeing repeated disasters, the general public is not learning and continues to ignore the fundamental risks that hurricanes pose. Think about the times that large-scale natural disasters, such as hurricanes, get center stage on the news and capture national interest: it’s usually only right before they occur and right after. For most people, the thought of hurricanes fades out of our minds rather quickly with many of us suffering from “hurricane amnesia,” or the general lack of regard for the incredible destructive power of hurricanes. In other words, many Americans forget about hurricanes for 350 days of the

year and then during the fifteen or so days when they're threatening land, people spring into action. The uncertainty that surrounds hurricanes – not knowing where and when they will strike – leads humans to not care too much about them and causes many Americans to possess the inaccurate belief that they are immune to the effects of hurricanes. Unfortunately, many people end up not preparing enough, or at all, for the storm before it's set to make a direct hit. It's too late at this point. The money and time needed to be invested into hurricane preparedness initiatives months ahead of time, not days before landfall. Unfortunately, this is the reality that our country faces summer after summer. Clearly, something must be done so Americans can be better prepared for hurricanes, especially with the effects of climate change influencing hurricanes moving forward. The best way to increase hurricane preparedness in America is to require local, state, and national governments to invest in preventative funding, which will be used well before hurricanes make landfall by educating and preparing residents in areas threatened by hurricanes so that lives and money can be saved when these storms do inevitably strike.

There is no denying the tremendous destructive power that hurricanes possess, as well as the numerous threats they pose, causing enormous financial losses and tragic deaths. When hurricanes are covered by a variety of media outlets, most of the focus is often centered on the winds. After all, hurricanes are ranked using the Saffir-Simpson scale based on their maximum wind speeds. However, it may be surprising to learn that 88% of hurricane related deaths in the United States from 1963-2012 were because of water – from flooding and storm surge – not due to the winds (Erdman). Furthermore, roughly half of all deaths caused by hurricanes were solely thanks to storm surge; an aspect of hurricanes that often gets overlooked (Erdman). The size of the storm and the strong winds blowing onshore combine to rise sea levels and push copious

amounts of water from the ocean onto the land. Houses can be washed away and people can be left stranded on the roofs of their own homes, praying that help will find them. The classic example of this is Hurricane Katrina back in 2005, which was only classified as a category 3 storm. However, due to the size of Katrina, enough water was pushed onshore that the city's levees broke causing billions of gallons of water to cover 80% of the city, killing over 1,000 people and damaging more than 300,000 houses (Brinkley, Amadeo). Even for those that do not live near the coast, flooding can occur inland as well from hurricanes. Hurricane Irene, which made landfall in New England in 2011, is a perfect example of this, when excessive rainfall as far inland as Vermont washed away roads and bridges, damaged homes and businesses, and caused nearly half of the deaths attributed to this storm (Erdman). This past 2017 hurricane season was also the costliest hurricane season on record, with Hurricanes Harvey, Irma, and Maria all costing over \$50 billion dollars each and all ranking in the top 5 costliest hurricanes ever (Rice). This was absolutely a remarkable and unusual hurricane season, and Americans must learn from it in order to get better at limiting the amount of deaths and financial losses caused by these destructive natural disasters. Coming to the realization that there will always be more lives and money that can possibly be saved is important, so that we continue to learn from our mistakes and get better in the future.

While hurricane forecasts and readiness in the United States have improved drastically over time, especially since Hurricane Katrina, too many people remain insufficiently prepared for when the next hurricane strikes. Even though hurricanes remain difficult to predict, especially because they can suddenly intensify unexpectedly or change their course rather quickly, hurricane forecasts have been steadily improving over the past two decades. This has helped to dramatically reduce the amount of deaths hurricanes cause each year. When taking a look at the

top 30 killer hurricanes that have made landfall on the U.S. mainland since 1850, only three were in the past four decades (Michaels). This demonstrates that better forecasting, communication, and preparedness has made it easier to survive a hurricane over the years. For example, a category 4 hurricane struck Galveston, Texas in 1900 killing between an estimated 10,000 people due to U.S. Weather Bureau officials ignoring a warning from the Cubans that the storm was coming (Michaels). Beginning in 2001, five days forecasts were able to be issued for hurricanes, and now the distance between where a hurricane is predicted to make landfall and where it actually makes landfall has been reduced to around 50 miles or less (Michaels, Chemi). Over time, this has given officials valuable time to declare a state of emergency and call for evacuations, if needed, to help more people be prepared for when the storm hits. But these improved forecasts have only helped people in the short-term in the days before the storm hits. What about months, or even years, before a hurricane is headed straight for a densely populated area? Is it ever too early to be prepared?

The record-breaking 2017 hurricane season offered Americans an abrupt wakeup call that deficiencies are still present in the way Americans prepare for hurricanes and reminded the general public that working towards being sufficiently prepared for a hurricane is a year-round activity. Residents, businesses, and organizations all must look back and reach the conclusion that they were not well prepared for this past hurricane season. After Category 4 Hurricane Irma slammed into the peninsula of Florida in early September, a survey of 500 Florida residents was conducted in early December and found that 51% of residents said they were underprepared for Irma (Etters). This could have included not having enough emergency supplies, such as food and water, not having an evacuation plan, not protecting their homes, or a multitude of other reasons. This may be surprising since Florida is, by far, the state that gets hit by the most hurricanes, so,

intuitively, Floridians should know what it means to be ready for a hurricane. The general lack of preparedness might have been attributed to the fact that before Hurricane Irma in 2017, it had been twelve years since a hurricane had made landfall in Florida. Residents might have fallen into the trap that they were safe from hurricanes and not taken the necessary steps to prepare until it was too late.

It should also be noted that having the right supplies for a hurricane is only half the battle; knowledge is arguably more important when it comes to being adequately prepared for a hurricane. The same survey of Floridians found that many don't know proper safety procedures, such as when using a generator, and many don't know what is covered under their insurance policy (Lucas). Many Florida residents tried to purchase flood insurance as Hurricane Irma was approaching, but only about a third of those who tried were successful in doing so (Lucas). This is, again, another prime example of things that must be done months, not days, before the hurricane strikes.

Additionally, it was not just the residents who were unprepared and suffered the consequences; companies were also not prepared for the 2017 hurricane season. A survey was conducted by a property insurance company of senior financial executives at *Fortune 1,000* U.S.-based companies with operations in Texas, Florida or Puerto Rico - the three places hardest hit by hurricanes in 2017. The results showed that "of those impacted, 62% admitted they were 'not completely prepared' to deal with the effects of the hurricanes" (MH&L Staff). Even in a time with advanced technology and much improved forecasting, companies and residents are not taking the necessary steps to be ready for a major hurricane to strike. As Dr. Louis Gritzko said, "people routinely fail to understand or acknowledge the magnitude of risk until they've experienced a fateful event" (MH&L Staff). If more people can be convinced about the imminent

threat of hurricanes and the right steps are taken to help them overcome this major mental barrier that Dr. Gritzo talks about, then limiting the damage and injuries caused by hurricanes might be a more common occurrence.

The best policy to solve the problem of Americans not being well prepared for hurricanes involves the government investing in preventative funding before the storm hits, which will be used to educate and prepare Americans in vulnerable locations, so that more lives and property can be kept safe from hurricanes moving forward. Making the right investments well before the storm makes landfall, by both citizens and politicians, is what will and reduce the amount of money lost when the storm hits.

The funding of most of the educational campaigns must come from the government, so getting local and national politicians onboard and willing to spend the necessary funds on these programs is of paramount importance. It can be agreed that politicians are always focused on obtaining more positive reviews from the public and getting more votes. When it comes to assessing how politicians did preparing and responding to hurricanes, voters will always have the final say. If the public thinks that the person in office did a good job of handling hurricanes, they are rewarded at the polls instead of being punished for doing a bad job. Social scientists Andrew Healy and Neil Malhotra pointed out that the federal government has two choices about where it wants to spend its disaster money. They can either invest it in preparedness efforts before a crisis, such as in infrastructure and awareness programs, or spend it after the hurricane hits, such as through payments to victims and helping communities rebuild (Roeder). The social scientists wanted to see which disaster spending approach voters favor more. Based on data from 1998-2004, within one presidential election cycle, voters reward presidents if they spend disaster funds on relief instead of on preparedness (Roeder). It's unfortunate that most Americans reward

leaders who spend money after the disaster instead of before it because the researchers found that spending about \$1 on hurricane preparedness is equivalent to spending around \$15 on relief (Roeder). Even though we can immediately see what our money is being put to use for by paying for relief efforts, contributing money to a long-term awareness and preparedness campaign is by far the better investment method. To make matters worse, most of the relief efforts don't help to improve the affected regions' preparedness moving forward – they just return it back to the way it was, waiting for the same disaster to happen again. The reasoning behind Americans favoring spending money on relief efforts is most likely because the positive impacts of investing money into hurricane preparedness are less clear and harder for an average citizen to wrap their mind around compared to the easier to understand concept of helping people after the storm.

Clearly, a shift in the political agenda needs to happen or else our country will wind up in an endless loop that continuously invests in disaster *relief*, instead of disaster *preparedness*. Encouraging as many voters as possible to demand funding for disaster readiness is a good first step. Then, if enough of the general public realizes that it's better to be investing money before hurricanes strike, government officials will have to follow what the public wants.

A good portion of these hurricane preparedness funds should be dedicated to educating Americans in areas of the country that have the possibility of being affected by a hurricane about what it means to truly be ready for a hurricane. The National Hurricane Center (NHC) has already been running awareness campaigns which includes local visits, awareness tours, and online resources to reach and educate as many people as they possibly can. For instance, in April 2017 over 1,000 people showed up to visit the NHC office in Miami where they learned how hurricanes are forecasted and how they can be hurricane ready (Cangialosi). National Weather Service offices and private-sector weather companies that are located in hurricane prone areas

could also do certain events, such as this one, in order to attract a large crowd of people and teach them about what it means to be prepared for a hurricane.

The NHC also plays a large part in organizing a hurricane preparedness tour that travels along the Gulf Coast and the East Coast each year where over 13,000 people, the most ever, showed up for the 2017 tour (Cangialosi). The NHC hopes to “spread the hurricane preparedness message through local media and emergency managers,” so that the public awareness of hurricanes is increased and so that those in hurricane prone areas are better prepared for when the next storm strikes (Cangialosi). This tour is a wonderful thing that the NHC is doing, but the NHC is only one group of people.

If the message that the NHC is providing to the general public on these tours was brought into classrooms and shown in the media more often, a larger audience could be reached and educated. Teaching kids when they’re still in school about being prepared for hurricanes can be both fun and informative. Not only do they get to learn about the awesome science behind the storms, but they can use this knowledge to tell their parents what they should be doing to prepare as well as using the information later on in their own lives. Additionally, little to no media coverage is given to hurricanes during the “off-season,” generally from December to May, but this time should be spent informing people how to get prepared for hurricane season.

Newspapers, websites, television networks, and radio stations all need to work together to do a better job at getting the public hurricane ready. This could be by showing demonstrations of what the proper safety procedures are, creating lists of what materials you should have on hand, or just reminding people that this could be the year that a hurricane strikes their town.

The message of an educational campaign should be kept simple so people understand it quickly and are motivated to act. For example, six months after Hurricane Maria ravaged the

island of Puerto Rico, their government has launched an easy to understand hurricane preparedness campaign, highlighted by the five steps that families must take in order to be ready (Press Release). Having a single, government funded hurricane readiness campaign in the United States, similar to the one in Puerto Rico, will make it easier for more people to be reached and empowered to take action, since it will feel like everyone is working together towards a common goal. An updated, easy to navigate, visually attractive website teaching people about hazards of hurricanes and the steps they need to take to be hurricane ready is a good start. Additionally, with all of our connections on social media today, sharing tips and reminders about being prepared for hurricane season with a common hashtag might be another effective way to reach a greater number of people with an awareness campaign.

The NHC could be responsible for some aspects of this enhanced awareness campaign if more employees are hired and dedicated to this role, but other media outlets and private-sector meteorology companies will also have to step on board to lend a helping hand. At some point, it should become necessary that people in hurricane-prone areas are exposed to enough education and information about preparing for hurricanes so that they can be ready. Informational cards could be sent out in the mail to these areas of the country as well, telling residents the steps they need to take now to prepare and what they should do when a hurricane is forecasted to impact them. The government is the main initiator of most of the aspects of this awareness campaign, so getting them to believe in it and that it will work is our first priority.

Mexico is a perfect example of what happens when a government fully invests in hurricane preparedness initiatives and educates people about hurricanes. In 1955, Category 5 Hurricane Janet slammed into the coast of Mexico killing around 500 people (Michaels). In the years since this horrible disaster, the Mexican government has implemented education initiatives,

created a robust national emergency response system, and learned from their mistakes (Neuman). In 2007, Category 5 Hurricane Dean was headed for virtually the same spot that Hurricane Janet hit more than a half-century ago (Michaels). However, this time the outcome was drastically different. The Mexican government ordered a massive evacuation of vulnerable areas and the storm remarkable killed no one (Michaels). Similarly, in 2015, Hurricane Patricia, the most-intense tropical cyclone ever in the Western Hemisphere, struck the west coast of Mexico and only killed six people (Campoy). Mexico demonstrates to us that if government funds are used properly to support proper education campaigns and implement helpful infrastructure, deaths can be prevented and property can be saved.

America's lack of hurricane preparedness has been an ongoing issue that was recently exacerbated with the 2017 hurricane season. Some lives and money were lost due to the general public's lack of knowing what it means to be prepared for a hurricane. A two-part policy is the best way to solve this complicated issue and move our country in a better direction when it comes to dealing with natural disasters. Educating more residents and businesses owners about what it means to be prepared for a hurricane will help to keep these people more aware and ready for when the next hurricane strikes. Adequate local, state, and national funding will be necessary to fund these awareness campaigns, and a clear political shift will need to take place so that more people favor spending money on hurricane preparedness instead of on relief. This policy has the potential to change the way American prepare for hurricanes for the better and achieve the end goal of saving as many lives as possible and reduce the costly damages caused by hurricanes.

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