



# EXTREMES



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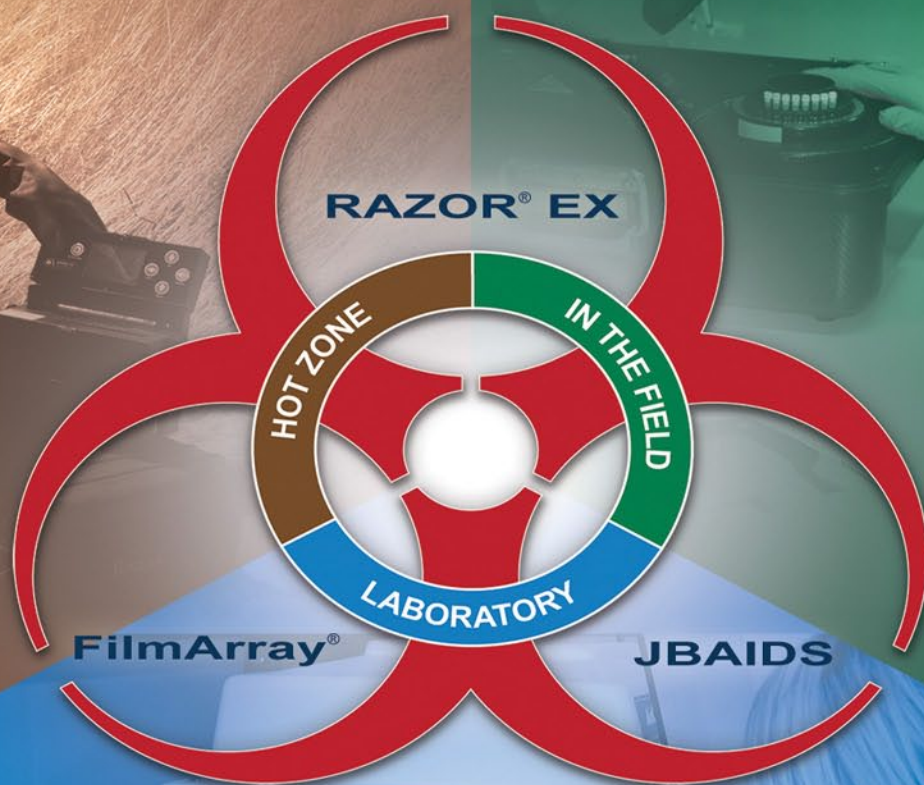
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# Editor's Notes

By Catherine Feinman



Many factors such as physical geography, built environment, and population density can increase or decrease the potential consequences of an extreme weather event. As such, emergency planners, responders, and receivers must mitigate a wide variety of potential threats and hazards – winter storms, floods, mudslides, droughts, wildfires, earthquakes, and many more

Stephen Grainer leads this issue by describing the challenges and opportunities presented by natural disasters. Although it is not possible to control extreme weather events, tools and training do exist that can help mitigate the costs and damages caused by such incidents. Kay C. Goss shares information about ways that the government, emergency personnel, and the public can each play a critical role in raising the level of awareness and preparedness for an event of any size.

Although spring has officially arrived in the United States, parts of the country are still facing a wintry mix of snow, ice, and freezing rain. Kim Fuller and Crystal Kline offer 10 tips to help avoid costly winter planning mistakes. Regardless of the season, other agencies, the media, and the public will be watching.

California and Alaska are two states that are taking action by examining past events, responding to current events, and preparing for future events. Mark Ghilarducci and the California Office of Emergency Services are increasing preparedness and response efforts as the state continues to battle “extreme” and “exceptional” drought conditions.

Further north, John W. Madden and the state of Alaska are getting ready to begin a National Capstone Exercise to commemorate the 50th anniversary of the Great Alaska Earthquake and Tsunami and prepare for future earthquakes. As Tsunami Preparedness Week continues, Christa Rabenold provides information about developments and advancements in earthquake and tsunami science since 1964. Such advances are helping communities build awareness and develop exercise plans for expected and unexpected events.

Even if a community is not susceptible to a tsunami, it is likely to have some level of flood risk. Margaret Davis explains the necessary changes to the National Flood Insurance Program, which means that some homeowners and builders will have to make tough decisions.

Other naturally occurring threats that can reach members of any community are infectious pathogens. Robert C. Hutchinson warns of the importance of staying vigilant as these potentially deadly pathogens evolve, emerge, and re-emerge in various parts of the world.

Rounding out the issue is an article on a “mass-fatality” incident that killed 16,651 people in the United States in 2010 and the death toll continues to rise. Joseph Cahill addresses the human-caused “disaster” of opioid overdoses. For all types of disasters, H. Steven Blum emphasizes the need for all levels of government to support local authorities when they are overwhelmed.

*About the Cover: Extreme weather events can happen anywhere at anytime. Floods, tornadoes, snowstorms, droughts, earthquakes, and hurricanes are only some of the natural disasters that communities must prepare for.*





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# Natural Disasters: Challenges & Opportunities

By *Stephen Grainer, CIP-R*



Every emergency or disaster presents a relatively unique set of challenges. By their nature, natural disasters are difficult or impossible to avert or disrupt in advance. For example, science and technology have yet to develop techniques, equipment, or strategies to divert a tornado, deflect high winds, or steer a hurricane away from landfall.

Hence, a primary challenge of a naturally occurring disaster is to identify the types of natural disasters that can affect a community and the likely consequences that will manifest. Although most local and state governments have identified the hazards to which they are most susceptible, in a broader sense, the United States must realistically anticipate any type of scenario imaginable.

## Threat Assessments, Resources & Mutual Aid Agreements

Emergency preparedness and planning typically revolve around a comprehensive hazard analysis, which can provide the local, state, and federal governments with a general picture of the types of disasters that threaten specific geographical areas. Since 2011, with the issuance of Presidential Preparedness Directive 8, the Department of Homeland Security, through the Federal Emergency Management Agency, has used a Threat Hazard Identification and Risk Assessment (THIRA) process to support and facilitate the development of a national preparedness goal and a corresponding national preparedness system. The THIRA process addresses three primary types of threats and hazards: natural, technological (nonhuman-caused failure of a system), and human-caused.

Concurrent with the identification of the threats and hazards that confront a community and its state, the THIRA process defines the core capabilities necessary for each mission area, including prevention, protection, mitigation, response, and recovery. Incidentally, the THIRA process closely mirrors an earlier process promulgated by the Federal Emergency Management Agency more than two decades ago; the Hazard Identification/Capability Assessment – Multi-Year Development Plan (HICA-MYDP) provides similar outcomes but, over time, it became unmanageable.

Another challenge is the accurate and comprehensive identification of the resources necessary to respond should a disaster occur – particularly any of the disasters identified in the THIRA process. With that comes the identification of the source of those resources. If the necessary resources are available and accessible locally, then that addresses at least two major hurdles: (a) timely response; and (b) effective management based on relative familiarity. However, as is well documented, not every jurisdiction can obtain and maintain every imaginable resource. In such cases, most jurisdictions plan to obtain necessary resources through neighbor-to-neighbor mutual aid.

For many years, agencies and organizations have employed basic mutual aid agreements as a means to overcome local shortfalls. However, another challenge frequently encountered during a natural disaster is that disasters do not conform to political boundaries. In many instances, a natural disaster – as well as other types of disasters – affects numerous localities simultaneously. When the same event affects neighboring jurisdictions that must respond first to their own conditions, this can render traditional neighbor-to-neighbor mutual aid agreements null and make resources unavailable.

In the 1990s, the federal government encouraged states to begin developing intrastate mutual aid systems, sometimes referred to as “statewide mutual aid.” Since then, the Virginia Department of Emergency Management has coordinated and administered a statewide mutual aid program across the Commonwealth. Every jurisdiction in the Commonwealth is now a member of the program, so each jurisdiction has agreed to share its resources – with or without an associated cost – provided the home jurisdiction does not need the resources at that time.

When a jurisdiction’s resources and its neighbors’ resources are either unavailable or incapable of confronting the present threats and hazards, the next option is to request statewide mutual aid through the appropriate channels. In many cases, resources from unaffected and distant jurisdictions within the state can mobilize and deploy resources to meet the needs of the affected area or areas. This widely practiced “next step” helps jurisdictions acquire resources from remote locations.

Further, at the national level, the Emergency Management Assistance Compact (EMAC) provides a mechanism for accessing resources from other states in times of need. Again, in the 1990s, efforts to promulgate the EMAC process began between several states and gradually grew. Since the terrorist attacks of 9/11, every state has become a signatory to the EMAC agreement.

Intrastate, or statewide, mutual aid as well as EMAC assistance have become commonplace in every state in the union as well as the U.S. territories. In a sense, these programs have not only taken emergency planning “outside the box,” but they also have enlarged the box. The resource pool at the national level far

exceeds that of any jurisdiction and certainly most individual states. The relatively simple process of accessing critically needed resources from distant locations – sometimes in other states – provides a significantly expanded resource capability.

## **Managing Resources & Ongoing Training**

However, simply being able to access an array of resources from anywhere does not provide some fundamental needs for disasters. Another major challenge that can quickly arise is in actually managing the resources committed to the tactical intervention operations. Beginning in 2003, the National Incident Management System has encouraged, if not fostered, the establishment of a standardized incident management system. The Incident Command System (ICS) has been widely taught, discussed, and even practiced in the past decade.

ICS benefits are now more widely accepted at the fundamental level. Yet, there is still contention that it does not provide adequate mechanisms for managing widespread disasters. Some continuing detractors of ICS have criticized the system for being inadequate to manage the impact of Superstorm Sandy, which struck almost the entire east coast of the United States and well inland from the coast itself.

Managing disasters such as Sandy demands a degree of flexibility and adaptability to changing conditions and situational needs beyond those typically encountered in localized scenarios. The ICS provides a number of templates for managing even uncommon incidents. Natural disasters with geographically widespread impacts necessitate nontraditional, and perhaps even uncomfortable organization and decision-making.

Typically, for the “average” incident manager or emergency manager, training and application of ICS has had limited geographic and political impacts. In essence, most incident commanders and emergency managers limit their thinking and practice to local incidents with local consequences. If practice is limited to routine or recurring drills, the execution will naturally be limited to the level practiced. Although that may be acceptable for commonplace situations, an extremely rare disaster, such as Sandy, would severely challenge and stress the systems’ application.

Organizations that use ICS on a daily basis in addition to periodically training and using more-advanced incident command methodology frequently find less stress or distress in adapting to major disasters such as Sandy or Katrina. For example, in its response to the devastation of Sandy, the National Park Service applied expanded ICS principles to manage its massive operations in more than five states simultaneously for upwards of one hundred different national parks, monuments, and historical sites. Practices taught in ICS-400 (ICS for Command and General Staff – Complex Incidents) – including multiagency coordination, establishment of an “Incident Complex” (i.e., a specific organizational template used for large and dispersed operations under one incident commander), management organization, and use of area command organizations to manage the many and geographically dispersed sites – made the oversight, coordination, and execution of the many tasks both possible and manageable.

## Expanding the Incident Management Strategy

In summary, natural disasters can occur anywhere and frequently ignore political boundaries. A natural disaster presents both challenges and opportunities not typically encountered or practiced (exercised) in emergency management. The challenges involve thinking and managing beyond the traditional and customary parameters for incident commanders and emergency managers. As such, a natural disaster may demand that

the incident management efforts be elevated to an often unfamiliar and, quite likely, an uncomfortable level.

Natural disasters often necessitate multijurisdictional efforts and coordination. They also often require the integration of numerous and diverse resources. Sometimes resources may only be available at distant locations, which results in response times far longer than customary for local or regional efforts. On the other hand, the opportunities include employing concepts of incident command built on the basic management components of command, planning, logistics, finance, administration, and operation to establish a cohesive management organization.

Existing, albeit uncommon, organization templates provide means to confront and manage the challenges of major natural disasters. In order to meet these challenges, incident commanders and emergency managers can enhance their efforts by continuing advanced training and/or revisiting past training to refresh their understanding of methodology available for the once-in-a-lifetime challenges.

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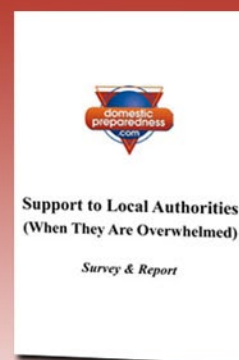
*Stephen Grainer is the chief of IMS programs for the Virginia Department of Fire Programs (VDFP). He has served in Virginia fire and emergency services and emergency management coordination programs since 1972 – in assignments ranging from firefighter to chief officer. He also has been a curriculum developer, content evaluator, and instructor, and currently is developing and managing the VDFP programs needed to enable emergency responders and others to meet the National Incident Management System compliance requirements established by the federal government. From 2010 to 2012, he served as president of the All-Hazards Incident Management Teams Association.*

## DomPrep Special Report

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# Preparing for Extreme Weather Events

By Kay C. Goss, *Emergency Management*



The United States has received significant attention for its extreme weather events in 2014, with the worst drought in recorded history in California and significant moist snow, sleet, and ice in the eastern and southern states. The year 2013 had its share of extreme weather, as well, including:

- [Winter Storm Nemo's](#) multiple feet of snow and extensive coastal flooding in New England (February);
- A strange [May snow in Arkansas](#);
- An awful May double-punch of tornadoes in central Oklahoma – [Moore](#) and [El Reno](#); and
- [One of California's largest wildfires](#) on record in Yosemite National Park (beginning in August).

## The Cost of Extreme Weather

According to the National Oceanic and Atmospheric Administration's National Climatic Data Center, there have been [151 weather and climate disasters](#) in the United States since 1980 that met or exceeded \$1 billion in overall damages (consumer price index adjusted to 2013). Each disaster illustrates the scope, vulnerabilities, trends, and challenges the nation faces in emergency management.

Traditionally, the Federal Emergency Management Agency (FEMA) – as well as state, tribal, and local emergency managers and other emergency service providers – has prepared for the most frequent disasters in specific locations. Over the past few years, FEMA Administrator Craig Fugate has called on emergency professionals to prepare for large catastrophic events. The strategy behind such a challenge is that it is much easier to scale down than scale up a response to a disaster.

If a disaster expands beyond the scope of the response, it can be nearly impossible to catch up – as graphically was the case in 2005 with Hurricane Katrina (more than \$200 billion in losses), and even Hurricane Sandy in 2012. Thus, FEMA adheres to the whole community

organizing principle for preparedness, mitigation, response, and recovery. “Whole community,” in this case, specifically means every person is a key component of the entire process. Everyone – individuals, families, businesses, academic institutions, private and nonprofit organizations, and government agencies – shares the responsibility for mitigation and preparedness, as well as for building resilience.

## Congressional Testimony & Necessary Actions

Meanwhile, unusual disasters continue to occur in unusual places. They also occur in high frequency and intensity, so much so that Congress held hearings on that subject on 12 February 2014 – the day after an estimated \$80 million to \$3 billion dollars had been lost on cancelled flights and other economic fallouts due to snow, ice, and sleet from Houston, Texas, to Boston, Mass., and beyond.

In the February hearing on “[Extreme Weather Events: The Costs of Not Being Prepared](#),” as the nation's capital prepared for another snowstorm that would accumulate to more than eight inches, the U.S. Senate Committee on Homeland Security and Governmental Affairs was on point. In the years following hurricanes such as Katrina, Irene, and Sandy, the nation has made efforts to better prepare for extreme weather events. However, there is significant room for improvement – for example, more than 2,000 students had to spend the night at their schools in Georgia when a January 2014 snowstorm caught the city off guard. Such challenging events are no longer rare and they seem to be increasing in severity.

Delaware's Senator Thomas R. Carper, former governor who is familiar with disasters, chaired the February hearing and noted, “And even today, the East Coast is preparing for yet another snowstorm while the West Coast is experiencing a historic drought and increased fire danger with no end in sight.” He further testified that each event grows more expensive and dangerous – for example, the estimated cost of Superstorm Sandy is \$75 billion in financial damages.



One of those who testified at this hearing was Collin P. O'Mara, Delaware's secretary of the Department of Natural Resources and Environmental Control, known for the best practices pushed in that state. O'Mara was blunt, "We need to stop rewarding communities that fail to prepare.... When a disaster hits, the communities that have used their own resources (and as a result suffer less damage) are effectively penalized through the nearly full reimbursement of damages for the unprepared communities, which is effectively a large subsidy for less responsible communities."

Delaware is building modernized stormwater, floodplain, and drainage regulations and standards, recognizing the threat of sea-level rise and the effect it could have on the state's economy and public safety. The secretary pushed the committee to build standards for resilience into all federal investments. He said this does not require a new bureaucracy, but rather should be built into every activity.

Mark E. Gaffigan, managing director of natural resources and environment issues at the U.S. Government Accountability Office, told the committee that previously "rare" events are not only more intense, but also are more common. These extreme events are occurring around the globe. In February, people from around the world watched the 2014 Winter Olympics in Sochi, Russia, which is located on the coast of the Black Sea. Around the same time in 2013, EMERCOM of Russia (The Ministry of the Russian Federation for Civil Defense, Emergencies, and Elimination of Consequences of Natural Disasters) responded when Russia had the highest level of snowfall in 100 years. Moscow traffic is always a challenge, but that extreme snowfall caused traffic queues of 12.5 miles, from bad visibility and icy roads alone. The airport services were impacted so much so that [Prime Minister Dmitry Medvedev's](#) plane, departing [Sochi](#) for Moscow, had to be diverted to [St. Petersburg](#) to wait for better conditions. This record amount of snow measured more than 80 inches in a short period.

### Online Preparedness Resources

There are many resources available to the public and to emergency personnel through the [Center for Disease Control and Prevention](#) website, through [Ready.gov](#), and through [FEMA's](#) website. Individuals also can sign up for Prepare-A-Thon – "Be Smart. Take Part. Prepare."



Another best practice is [Chapter 3](#) of FEMA's "Disciplines, Disasters, and Emergency Management Textbook." In that chapter, Associate Professor Kent M. McGregor, Department of Geography at the University of North Texas in Denton, Texas, addresses weather and emergency management. He tied the science of meteorology to the process of emergency management and described how weather causes disasters and affects the way in which agencies provide assistance. He divides his coverage into five distinct areas:

1. A survey of disasters caused by meteorological events, including durations of events, consequences, and scale.
2. The process of developing a weather forecast and disseminating the conclusions, including deciding who needs the information and in which format.
3. Basic meteorology, the atmospheric processes, high and low pressure, winds, air masses, and storms, as well as reading a weather map.
4. The major types of weather events, such as tornadoes, hurricanes, floods, droughts, heat waves, wildfires, and blizzards.
5. Current trends in atmospheric science. This section includes models and observation networks, covering global warming, regional climate cycles, and oscillations, such as the El Niño phenomena, affecting the tropical Pacific and places far away, through "teleconnections."

There are more than 275 emergency management higher education degree and certificate programs now available throughout the United States, and they comprise a very strong infrastructure for higher education on extreme weather and catastrophic events. FEMA Emergency Management Institute's (EMI) higher education webpage lists all of these by state, by degree, and by program.

In addition, each state and many tribes and localities have their own training programs, supplementing and supporting FEMA EMI's offerings. Also, there is a rich array of Independent Study Courses on all phases, all hazards, all agencies, all disciplines, and all stakeholders on the EMI website.

The challenges of extreme weather are increasing and should be viewed as continuing and constant, rather than episodic and occasional. There are many resources

available to the professionals and the whole community for building resilience to these extreme weather events through vigilant preparedness and mitigation, as well as the strongest possible response and recovery.

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# California – A Growing Response to Persistent Drought

By Mark Ghilarducci, State Homeland News



The emergency managers of the western United States – historically known for its vast frontier and arid climate – have always understood the importance of water. As the most populous state, California is home to leading enterprises, including a global agricultural industry, and a complex water system, but there is a growing demand for water. After three consecutive dry years, the state is experiencing an extreme drought that is calling on all Californians and the federal government to respond and mitigate the widespread effects.

## A New Drought Task Force

Understanding the evolving change in climate and the impacts of the drought on all sectors of society, Governor Edmund G. Brown Jr. established a Drought Task Force in December 2013. Members of the task force include: the Department of Water Resources, the Department of Food and Agriculture, the State Water Resources Control Board, and the California Governor's Office of Emergency Services (Cal OES) to coordinate the state's response.

To put the severity of this drought into perspective, California needs nearly a foot of rain to restore water levels to normal. According to the state's Department of Water Resources, though, there is only a 1-in-1,000 chance of that happening. B. Lynn Ingram, professor of earth and planetary science at University of California-Berkeley, and Frances Malamud-Roam, senior environmental planner and biologist at the California Department of Transportation, reported on 3 February 2014 that 2014 might be the [driest in the past 500 years](#).

Water, of course, is a valuable and limited resource, but this drought has stretched the availability of this commodity to the extreme. Based on conditions and recommendations from the Drought Task Force, Governor Brown took emergency action on 17 January 2014 by raising the awareness of the dwindling water supply and declaring a statewide state of emergency. In early March 2014, the Governor signed into law a measure to counter the effects of the drought by

allocating \$687 million for [drought-relief programs](#). Earlier this year, partner agencies in the Drought Task Force began holding government-to-government meetings across the state, as well as drought assistance workshops for the public, farmers, and business owners.

## Mapping, Trends & Predictions

Meteorological and climatological studies predict that, although this drought is perhaps the worst California has ever experienced, the state should anticipate even more brutal weather extremes – including hotter summers and longer freezes. Cal OES now must coordinate all of the various state, federal, and local agencies for one unified mission. With 58 counties, millions of residents, and millions of visitors and tourists, Cal OES is leveraging its pool of disaster mitigation specialists and first responders. The state's mutual aid system, adapted from the strategic responses to the state's massive wildfires, is a model for many jurisdictions around the world.

Mapping this widespread disaster has been critical to understanding and prioritizing current short-term and long-term resource and service needs. The National Aeronautics and Space Administration (NASA) and California's Department of Water Resources have a partnership to monitor and measure precipitation, snowpack, groundwater, fallowed lands, and levee





integrity throughout the state. This mapping technology has been essential to managing this emergency with a strategic long-term plan.

NASA's program called Gravity Recovery and Climate Experiment ([GRACE](#)) is using satellites to monitor changes in the Earth's mass and estimate water-level changes. A [2009 analysis](#) from GRACE showed that the level of groundwater reduction in the Sacramento and San Joaquin River Basins between 2002 and 2013 is enough water to cover the entire state of Pennsylvania to the depth of one foot.

## Cascading Disasters During Response & Recovery

A drought is unique in the world of emergency management. It moves slowly and chokes the resources of a region. According to the U.S. Drought Monitor, the drought is affecting more than 99 percent of the state, which encompasses more than 150,000 square miles. With an earthquake, fire, or flood, disaster response is swift and relatively short-lived compared to a drought. A more traditional disaster has its longest chapter in the recovery, not so with a drought. The progressively complex response phase could be as long or longer than the recovery.

The current drought also could be a strong indicator of a long and busy fire season in California. Since the beginning of 2014, there already have been 812 fires, which is well above the average 274 for this time of year. Due to the drought conditions, 17 counties have proclaimed a state of emergency and the U.S. Department of Food and Agriculture has proclaimed that every county in the state is under an emergency designation for the second year in a row.

Additionally, with large swaths of agricultural lands going unseeded and/or unwatered, [valley fever](#) is

a growing concern for state health and agricultural officials following a deadly 2013-2014 flu season – as of 14 March 2014, the California Department of Public Health has confirmed 332 flu-related deaths within the state. According to the Centers for Disease Control and Prevention, the number of reported cases of valley fever has increased dramatically from 2,265 in 1998 to 22,401 in 2011. This deadly disease, which tore through Arizona in 2012 and hospitalized more than 1,000 people, is endemic throughout the southwestern United States and specifically the California Central Valley.

## California's Call to Action

Emergency managers often preach personal preparedness: get an emergency kit; make a family evacuation plan; know the community's risks; and, particularly in the case of droughts, conserve personal water use. Although generally responsible and environmentally conscious, Californians still contribute to consequential water waste on a daily basis. As part of the governor's charge to the state and to the Drought Task Force, all Californians must rethink and reduce their water use. Cal OES provides several [Public Service Announcements](#) on its website to quickly educate the public on how one small change to a daily routine can help mitigate this statewide emergency.

Cal OES also is working with state, federal, local partners, and public followers on social media for idea sharing on creative ways to conserve water. California is not in this alone. States like Texas, Arizona, and Colorado also are taking drastic measures to tighten water allotments and conserve their precious limited resources. It is clear there is a lot of innovative work to do, on a scale that many may never have thought possible a few years ago.

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# Rising Waters & Tough Decisions

By Margaret Davis, Standards

An unfortunate reality many residents and businesses face during hurricane season in the United States is that homeowners insurance and renters insurance do not cover [flood damage](#). Only flood insurance, either purchased on the private market or through the National Flood Insurance Program (NFIP), covers damage caused by “rising tide water.” In 1968, Congress passed the [National Flood Insurance Act](#), which was originally designed to promote and encourage “sound land use by minimizing exposure of property to flood losses.” After severe flooding in 1993, Congress amended the law to mandate that residents and businesses in high-risk flood zones – including residents with a federally backed mortgage on a floodplain property – purchase flood insurance. Despite a purchase mandate and a large number of subsidized plans under the NFIP, a February 2013 [Congressional Research Service report](#) estimated that only 18 percent of U.S. residents who live in flood zones possess flood insurance of any kind.

If a resident or business does not have flood insurance during a presidentially declared emergency weather event, like a hurricane, they may be able to get assistance from the Federal Emergency Management Agency (FEMA) in the form of a [loan](#). These loans are low interest and do not fully compensate for damages incurred from a catastrophic weather event. Instead, residents and business owners may need to repay the loan in addition to an existing mortgage in order to rebuild.

In 2012, Superstorm Sandy caused severe flooding in highly populated areas of New York and New Jersey and an estimated [\\$50 billion of damage](#). Sandy was just one of several storms that ravaged the United States over the past few years. The costs associated with those storms represent a substantial part of the current financial hardship for residents – especially those without flood insurance. The NFIP is currently [\\$24 billion in debt](#) due to massive payouts from extreme weather and heavy subsidies for approximately 20 percent of its policyholders.

Between the rising sea level, which is causing current flood zone maps to expand in many areas, and the increasing severity of storms, it is likely that the

NFIP will [continue to incur debt](#). To address these anticipated problems, Congress passed the Biggert-Waters [Flood Insurance Reform Act in 2012](#), which: (a) called for premium increases for NFIP flood insurance policyholders; (b) directed FEMA to update flood zone maps for the first time in decades; and (c) lowered subsidies for NFIP policyholders.

The [new FEMA flood maps](#), many of which FEMA revealed in 2013, include an expanded high-risk flooding zone with a mandate for flood insurance coverage. Additionally, many of the subsidies and flood insurance rate increases are scheduled to take effect in 2014. A backlash from residents, who are accustomed to paying very low premiums for flood insurance compared to their actual flood risk, led to the Senate voting to delay the implementation of the Biggert-Waters Act in January 2014.

On March 4, the House of Representatives passed a [separate reform bill](#) that provides some retroactive funds to individuals affected by the NFIP changes and directs FEMA to “minimize the number of policies with annual premiums that exceed one percent of the total coverage.” Both bills are now in front of the other Congressional chamber, with some hope of the House version of the bill passing the Senate, but it is unlikely that President Barack Obama will support the measure. In a [27 January 2014 statement](#), the Obama Administration



stated that it could not support any delay in the Biggert-Waters reform measures because the “implementation of these reforms would further erode the financial position of the NFIP, which is already \$24 billion in debt.”

Although the Obama Administration’s stance on flood reform measures is politically unpopular, this approach would help curb the financial burden of rebuilding homes and businesses in areas increasingly prone to flood risk. One element of the House bill that could be beneficial to all home and business owners is a mandate to notify communities affected by new flood map models and provide a 30-day consultation period to discuss the models. This notice requirement could help owners better understand the high-risk areas in which they currently reside, helping individuals choose whether or not to remain in that area as the climate and risks change.

These changes to flood insurance premium subsidies will be very difficult for homeowners and business owners to bear, but without a way to address the increasing risk of flooding in these areas, it is economically untenable to maintain the old system. Even though some homes and businesses were located in the floodplains before the enactment of the NFIP, the new premiums more closely reflect the actual risk of flooding in these areas as the climate changes and the United States continues to experience severe weather events.

To avoid overly burdensome rebuilding costs and prepare for flooding, all residents should determine if they live in a flood zone. All owners of homes and businesses located in flood zones should purchase and maintain flood insurance in order to avoid financial ruin. Structures also should be as flood resistant as possible, even if that means raising them into the air to avoid flood damage. Although these preventative solutions are expensive, it will be much less expensive than the damage caused by flooding.

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*Maggie Davis is a law and policy analyst with the University of Maryland Center for Health and Homeland Security (CHHS). Before working for CHHS, she volunteered in the state of New York, helping with Superstorm Sandy recovery efforts and community mobilization. She holds a Juris Doctor degree from the University of Maryland Francis King Carey School of Law, and bachelor and master degrees from Case Western Reserve University.*

## Ten Winter Issues Every City Should Address

*By Kim Fuller & Crystal Kline, Emergency Management*



Soon after Punxsutawney Phil came out of his hole and saw his shadow in February, the National Weather Service issued a winter weather advisory that would affect at least 26 states. Two weeks later, the same region of the country was again under a similar warning for severe winter weather. The second week of March brings another Winter Storm warning to a large portion of the northern plains. With this type of repeat weather pattern, there is one thing that every city official should have in their emergency management playbook and that is a weather annex for snow and ice in their emergency operations plan.

In the past 10 years, Seattle (Wash.), Long Island (N.Y.), Atlanta (Ga.), and even entire states such as Pennsylvania have been affected by snow and ice storms that have paralyzed their cities. Some handled the response efforts better than others, but all received criticism from their citizens as well as outsiders. Every city, county, and state leader responsible for any aspect of emergency response functions should look at these 10 points to make sure they have addressed possible gaps in responding to an “unexpected” weather event:

1. Develop a relationship with the city’s emergency manager. An inadequate local or federal response to a disaster can have a significantly negative impact on an administration. A good relationship with local emergency management is a powerful foundation for a strong response.
2. Consider hiring a professional emergency manager if one is not already in place. A leading trend of 2014 is to professionalize the emergency manager position. Many of these managers have a professional degree in the field or, at a minimum, have practical experience in managing a disaster response.



3. Have a worst-case scenario plan for the local area. Many emergency managers would consider snow and ice as their worst-case scenarios because the impact has surprised them in past years. Snow events have shut down the entire state of Pennsylvania in 2005, Seattle in 2008, Long Island in 2011, and Atlanta in 2009 and 2011.
4. Pull the worst-case scenario plan “off the shelf” and exercise, exercise, exercise. Conduct a drill with all community and area partners. Develop a relationship with the private sector, schools, hospitals, and all levels of government and have a way to communicate with them before, during, and after the storm. The emergency operations plan and snow and ice annex should include who will do what, at what time, with what resources, and by what authority – before, during, and immediately after an emergency. The Federal Emergency Management Agency is a good resource for updating the plan.
5. Include all area partners in drills and in emergency responses – county, state, weather service, businesses, and schools. Public-private partnerships – especially in the planning for disasters – are critical and, during an event, should be represented in the emergency operations center or via teleconference, email, or phone. Communications should be two-way to help with situational awareness.
6. Activate the emergency operations center early. Err on the side of being open and operational before the crisis occurs. In many cases, emergency operations centers open too late or not at all.
7. Have situational awareness capability, and identify what the triggers would be to take action. In many cases, reporting comes from first responders, public works staff in the field, traffic cameras, and social media posts and photos.
8. Empower response officials to have decision-making authority and ensure they have and know the trigger that indicates that they should take action. Be in contact with the emergency manager and find out what to expect and when.

9. Communicate, communicate, communicate. Public information dissemination is critical for knowing how the citizens perceive a community’s response. The message needs to be congruent with what the public is seeing in news reports as well as their own observations. Use traditional and nontraditional media, including social media. Also, manage the expectations of the public.
10. Learn from other communities’ responses. The ability to respond to a disaster effectively sometimes is reflective of the amount of experience an official has in actually managing a disaster. Try to learn from other communities’ mistakes through the review of after-action reports and independent review of their disaster responses.

It is rare that the media or the citizens will even know when city officials have done a stellar job of responding to a snow and/or ice incident. But when that response is inadequate, all attention will be on that community.

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*Kim Fuller (pictured) is a former spokesperson for the Federal Emergency Management Agency (FEMA) and is an emergency management media relations consultant. She has been on the team that conducted the independent reviews of a number of snow and ice incidents across the United States. She is the co-developer of a line of disaster safety applications including FindMeTornado, which has a web-based monitoring feature.*

*Crystal Kline is Oklahoma’s first female Master Exercise Practitioner (MEP). She has responded to numerous disasters, is an adjunct instructor at FEMA’s Emergency Management Institute (EMI), and has developed training curriculum for EMI and for Haiti’s first Community Emergency Response Team. She is the co-author of “Disaster Preparedness: A Living Free Guide.” She lives in Tulsa, Okla., where she has worked for many years to make Tulsa a disaster-resistant community.*

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# Preparedness & Progress for Emerging Pathogenic Threats

By Robert C. Hutchinson, Public Health

With the world's many evolving and emerging threats, infectious pathogens continue to be an important area for domestic and international identification and monitoring. It is an international concern that requires continuous domestic focus, evaluation, and collaboration. The Middle Eastern Respiratory Syndrome ([MERS](#)) and [H7N9](#) virus continue to expand their presence in animals and humans, requiring a high level of planning and preparedness. The evolution, resistance, and expansion that many virus strains have shown over the past few years have become a considerable challenge for planners and their operational partners:

- Reuters reported on [10 December 2013](#) that the H7N9 virus has a mutation that is resistant to Tamiflu, one of the few first-line treatment drugs;
- The University of Minnesota's Center for Infectious Disease Research and Policy ([CIDRAP](#)) reported on 17 December 2013 that the H5N1 avian influenza has resulted in a mortality rate of 59 percent;
- Rarely encountered viruses, such as the [H10N8](#), [H5N2](#), [H9N2](#), and [H6N1](#) influenzas, are diagnosed in humans causing illness and sometimes death; and
- In December 2013, Caribbean public health officials discovered the first locally acquired case of the exotic African and Asian mosquito-borne virus [Chikungunya](#), which was especially significant as the peak tourist season had just begun.

Only time will tell if these pathogens are emerging threats that are occurring more often, or if the nation is becoming more efficient at epidemiological surveillance, identification, and subsequent information sharing. Either way, robust and thoughtful preparedness must remain a priority.

## Goals, Challenges & Findings

For those in the public health and homeland security planning and preparedness fields, it is difficult to estimate or forecast the next emerging or re-emerging epidemic or pandemic threat. However, it may be even more difficult to generate and maintain interest in

these pathogenic threats when diverse and conflicting priorities exist. With so many other homeland security challenges confronting the nation each day, these distant, low-probability public health threats may not be a preparedness priority for some public health and homeland security professionals. However, there still are many achievements, lessons learned, and identified areas for improvement that these professionals can review and evaluate to assess preparedness levels and priorities.

A U.S. Department of Health and Human Services (HHS) Office of the Inspector General issued a [report](#) in 2009 that identified three findings for local pandemic preparedness regarding vaccine and antiviral drug distribution and dispensing:

- Selected localities had not addressed in their planning documents most of the vaccine and antiviral drug distribution and dispensing components and preparedness items identified in HHS pandemic influenza guidance.
- All selected localities conducted exercises related to vaccine and antiviral drug distribution and dispensing; however, most did not create after-action reports and improvement plans for these exercises.
- All selected localities collaborated with community partners to develop and exercise their plans to distribute and dispense vaccines and antiviral drugs during an influenza pandemic.

Through HHS, the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) is the coordinating body for federal agencies in charge of protecting the civilian population from potential adverse health impacts using medical countermeasures and coordination with its state, local, and tribal partners. Since the release of the [2007 PHEMCE Strategy and Implementation Plan](#), the nation has progressed in the development and stockpiling of medical countermeasures for emergency use. The updated [2012 PHEMCE Strategy](#) established the following national strategic goals for the next five years:



- Identify, create, develop, manufacture, and procure critical medical countermeasures;
- Establish and communicate clear regulatory pathways to facilitate medical countermeasure development and use;
- Develop logistics and operational plans for optimized use of medical countermeasures at all levels of response; and
- Address medical countermeasure gaps for all sectors of the U.S. civilian population.

In addition to these examples of governmental guidance and assessments, private organizations also have recently conducted informative preparedness studies. A [2013 report](#) by the Trust for America's Health and Robert Wood Johnson Foundation found that the national ability to prevent and control infectious diseases was hampered by limited resources and outdated systems. The report provided recommendations to address gaps in areas such as infection control and emerging global illnesses. Many of these recommendations and issues are not new, but continue to require review and contemplation.

### **Preparedness, Planning & Progress**

Of course, not all of the preparedness studies and reports are negative. The Center for Infectious Disease Research and Policy at the University of Minnesota [reported progress](#) in public health preparedness in late 2013. After a two-year effort to gather and analyze existing state-level data from a wide range of sources, a consortium of 25 public and private public health organizations awarded the nation an overall health-security preparedness score of 7.2 on a scale of 10, using 128 variables or measures. The study found strengths in health surveillance, incident and information management, and countermeasure management, in addition to areas for improvement, such as surge management and community planning and engagement.

The level of planning and preparedness for a potential novel viral public health threat or pandemic varies from report to report, but the most important consideration may be how truly prepared the nation would be for an actual large-scale incident. An exercise or assessment using current strategies, plans, and policies is based

on the existing framework or recent past experiences – after-action reports and lessons learned. Difficult and probing queries stemming from the above listed pathogenic developments may identify weaknesses within current plans and exercises, which will strengthen subsequent strategic plans and discourse.

From the information listed above, HHS and surveyed jurisdictions have plans and procedures for establishing points of distribution for medical countermeasures from the Strategic National Stockpile and other established sources. This preplanning is shrewd and crucial, but it may not be deep enough for the unexpected challenges and consequences. A more-detailed assessment of security plans and procedures for safeguarding supplies and personnel during each response stage may require additional consideration and exercising by planners and responders.

### **Law Enforcement, Identification & Prevention**

One example may be the guidance and training for law enforcement and public health officials to control access and use force, which may be necessary during times of noncompliance. Although this is a specific point, existing plans and procedures may not adequately consider the realistic loss of security and law enforcement resources – due to the worried-well, illness, or other absenteeism – for quarantine enforcement or distribution of medical countermeasures.

Plans and exercises also may not fully account for the enforcement actions during screening or medical countermeasures distribution, which may require existing personnel to execute other exigent duties and assignments – for example, expanded security, arrest processing, injured personnel, crowd control, or other defensive measures – to maintain control of the process and resources. These unanticipated duties can quickly exhaust limited personnel and require the deployment of precious resources from other assignments.

Controlling access to stores during Black Friday holiday sales can result in the loss of simple civil behavior. However, controlling access to limited and valuable medical supplies during a public health scare, when information may be inconsistent or conflicting, would likely present a greater challenge.

The Severe Acute Respiratory Syndrome (SARS) outbreak of 2003 in North America demonstrated that a domestic medical facility or laboratory – rather than an international border screening inspection – may identify and interdict an emerging public health concern. The interior identification of a public health threat greatly expands the number of jurisdictions that need to seriously and continually assess their intentions and capabilities. The unpredictability of a public health threat may greatly constrict the preparation and notification timeframe. Commonly agreed upon and well-understood plans, procedures, and training will need to evolve – with the potential threats – over time.

On 16 December 2013, the Centers for Disease Control and Prevention included the [top five threats for 2014](#). Two of those threats – emergence and spread of new microbes, and globalization of travel – are major causes for spreading illnesses. With regular reports of common and unique pathogens evolving, emerging, or re-emerging around the world, there may not be time to adequately prepare for a threat once it expands or explodes. A previously successful tabletop exercise or comprehensive plan may not be enough to effectively oversee or support the distribution of medical countermeasures or other critical actions if a serious illness outbreak were to occur next week. Many public and private organizations have demonstrated impressive progress in recent years, but so have many of the pathogenic threats.

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*The opinions expressed herein are solely those of the author in his individual capacity, and do not necessarily represent the views of his agency, department or the U.S. government.*

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## Preparing for the U.S. Tsunami Threat

*By Christa Rabenold, Emergency Management*

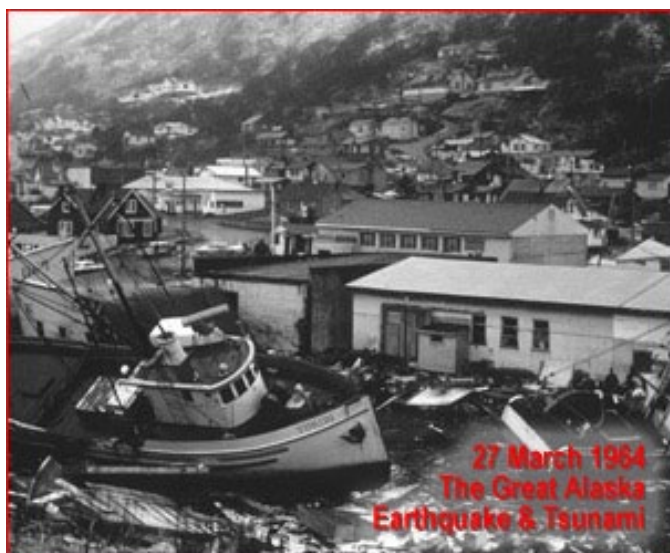


At 5:36 p.m., on 27 March 1964, without warning, the largest recorded earthquake in U.S. history, and the second largest in world history, occurred in Alaska's Prince William Sound. The 9.2-magnitude earthquake and tsunamis that followed significantly damaged or destroyed Valdez, Anchorage, and many villages along the Alaska Coast. More than 130 people died in Alaska, Oregon, and California. Damage from the tsunamis alone, which also affected the west coasts of the United States and Canada as well as Hawaii, was estimated at almost \$1 billion (2013 dollars).

This year marks the 50th anniversary of the [Great Alaska Earthquake and Tsunamis](#) and the 10th anniversary of the 26 December 2004 [Indian Ocean Tsunami](#). In addition, the 11 March 2011 [tsunami in Honshu, Japan](#), is still in the news. These events are reminders of how important it is to understand that tsunamis have affected U.S. coasts in the past, and they will again in the future.

### Advancements in U.S. Tsunami Preparedness Since 1964

Coastal populations and infrastructure have increased significantly since the 1964 event. However, in that time, the nation has made substantial advancements in earthquake science (led by the [U.S. Geological Survey](#))



and in the ability to detect, forecast, warn of, and prepare for tsunamis. Today, the National Oceanic and Atmospheric Administration (NOAA) leads the U.S. Tsunami Warning System, which includes:

- *Operating Two 24/7 Tsunami Warning Centers* – As a result of the 1964 event, the U.S. Coast and Geodetic Survey, now part of NOAA, established what is now the [National Tsunami Warning Center](#). Together with the [Pacific Tsunami Warning Center](#), established following a 1946 tsunami in Hawaii, the centers provide warning coverage to all U.S. states and territories. When they detect a tsunami threat, the centers, which are now operated by the NOAA/National Weather Service, issue tsunami alerts over an advanced telecommunications infrastructure.
- *Managing a Network of Tide Gauges and Tsunami Buoys* – A network of [tsunami buoys](#) in the Pacific and Atlantic Oceans and the Caribbean Sea, as well as sea-level gauges managed by NOAA, allow

for real-time tsunami detection, which enhances forecasting and warning capabilities.

- *Leading the National Tsunami Hazard Mitigation Program* – In 1995, Congress formed the [National Tsunami Hazard Mitigation Program](#) (NTHMP) – a partnership of federal, state, and territorial agencies led by NOAA – to mitigate the impact of tsunamis through public education, community response planning, and accurate hazard assessment.
- *Developing Tsunami Models* – NOAA and its partners have developed tsunami inundation and forecast modeling capabilities that help the warning centers forecast tsunamis and have enabled the creation of inundation and evacuation maps to support planning for and responding to tsunamis in high-risk communities. Through the NTHMP, tsunami evacuation maps are available for all populated U.S. Pacific coastlines.

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- *Administering the TsunamiReady Program* – Launched in 2001 by NOAA, the [TsunamiReady](#) program helps communities prepare for tsunamis through better planning, education, and awareness. As of 25 February 2014, there are 162 TsunamiReady sites – including 18 along the Atlantic Ocean and 43 in Puerto Rico.

## Tsunami Preparedness And Exercises

To boost tsunami preparedness efforts in the United States, NOAA, the Federal Emergency Management Agency (FEMA), and the U.S. Geological Survey, in coordination with the NTHMP, are promoting and supporting [Tsunami Preparedness Week](#), March 23-29. During this week, NOAA and its partners will promote tsunami awareness and safety, and urge coastal residents and visitors to prepare themselves and their families for a tsunami.

To assess tsunami preparedness, a number of exercises are planned during the week, including Alaska Shield 2014, an exercise based on the 1964 event, which is being led by the Alaska Division of Homeland Security and Emergency Management with substantial modeling and warning support from NOAA. Recognizing the significance of the event and the importance of the exercise, FEMA has incorporated Alaska Shield 2014 into its [Capstone Exercise 2014](#) – a complex, national-level emergency preparedness exercise required by law that will bring together federal, state, local, tribal, and private sector representatives to assess the nation's collective preparedness for large-scale disasters.

In addition, the NOAA/National Weather Service will lead [three tsunami exercises](#): CARIBE WAVE/LANTEX14 (Caribbean/Northwestern Atlantic), LANTEX14 (Gulf of Mexico), and PACIFEX14 (Pacific Coast). The purpose of these exercises is to improve the effectiveness of the tsunami warning system. They also provide an opportunity for emergency management organizations to test operational lines of communications, review response procedures, and promote preparedness. Emergency management organizations may participate

at varying levels, ranging from drills to full-scale exercises. As emergency managers well know, regular exercising of response plans is a critical preparedness activity.

*The largest recorded earthquake in U.S. history triggered deadly tsunamis that killed more than 130 people and caused an estimated \$1 billion (2013 dollars) in damage.*

## Learn More About Tsunamis

A tsunami could strike the U.S. coastline at any time. Although prevention of a tsunami is not possible, community preparedness, timely warnings, and effective response can mitigate adverse impacts. The [Tsunami Preparedness Week web page](#) contains information about activities taking place across the country to encourage preparedness and commemorate the 1964 event and provides links to tsunami-related preparedness information. For more information about tsunamis, visit [NOAA's Tsunami website](#).

*Christa Rabenold is the mitigation specialist for the National Oceanic and Atmospheric Administration (NOAA)/National Weather Service Tsunami Program (under contract to Syneren Technologies). Previously, she worked as a coastal management and hazards specialist with NOAA's Office of Ocean and Coastal Resource Management. Before working with NOAA, she was involved in state and local hazard mitigation planning for AMEC Earth and Environmental and served as the editor at the Natural Hazards Center, University of Colorado at Boulder. She is a certified floodplain manager and has a master's degree in public administration with an emphasis on hazards and emergency management.*

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# Alaska – Building a Firm Foundation on Shaky Ground

By John W. Madden, State Homeland News



An earthquake that was unlike all others the state had ever experienced in recorded history struck [Alaska](#) on 27 March 1964. The 9.2-magnitude earthquake radically changed the very shape of the land, with 50,000 square miles rising as much as 30 feet or falling by eight feet. It was the strongest earthquake to ever strike North America and second strongest only to a 9.5-magnitude earthquake in [Chile](#) on 22 May 1960.

Despite the devastation and destruction in Alaska, stories of courage, community, rebuilding, and resilience emerged in the aftermath. The response and recovery organized by local, state, and federal governments and supported by the private sector, volunteers, and the public set a new standard for response and recovery efforts across the nation.

## Commemorating a Catastrophe

Fifty years later, in commemoration of that catastrophe, the State of Alaska will conduct the largest, most complex exercise in its history, from 27 March through 3 April 2014. The [Alaska Shield exercise](#) will use the same geology as the 1964 event but will place it in today's built environment, population density, technology, and supply lines. The consequences of a similar event, of course, will be more severe and far reaching.

As in 1964, volunteers, civilian and military agencies, businesses, and the public will join the State of Alaska in the exercise. Together, they will test their plans, capabilities, and partnerships and measure these against the successes of their predecessors in 1964. Thirteen cities and boroughs will conduct tests of their capabilities for medical surge, sheltering, hazardous material response, level of care for those with functional needs, and public messaging. More than 30 state and federal agencies will test their abilities to work together to support the needs of the communities and the priorities of Alaska Governor Sean Parnell.

Beyond these traditional objectives, they will test many innovations of recent years. The state formed several task forces for broad mission areas such as energy, transportation, housing, health and medical, and public

safety. These task forces document how things work in peacetime, what can go wrong, and what will be the consequences. They then work across the groups to understand the interdependencies. These task forces will be part of the Joint Field Office (JFO) to address the problems and facilitate the decision-making process.

The JFO will fully integrate with state and federal leadership and staff, volunteer and private sector organizations, and others with vital authorities, assets, capabilities, and commodities. It also will provide concurrent work on response operations, Stafford Act recovery, and long-term recovery of the economy.

## A National Capstone Event

The Federal Emergency Management Agency and other federal partners designated the Alaska Shield exercise and all the supporting events as a [National Capstone Exercise](#). The Capstone intends to test the national capacity to support states during catastrophes.

In this exercise, participants will challenge many assumptions, test many policies, and validate many partnerships and plans. More importantly, though, they will learn if, in the half century since the Alaskan Earthquake of 1964, the organizations, plans, frameworks, and doctrines now in place have improved the effectiveness of the nation in the face of the catastrophe.

In his report to President Lyndon B. Johnson in September 1964 on the recovery efforts in Alaska, Senator Clinton P. Anderson of New Mexico (chair of the Federal Commission on Reconstruction) stated, "Theirs is a story of which all Americans can be proud." Even with modern ways and means, the nation has to continually work hard to earn the kind of praise the State of Alaska and the nation as a whole received in 1964.

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*First appointed by Governor Sarah Palin in January 2007, John W. Madden continues under Governor Sean Parnell as the director of the Division of Homeland Security & Emergency Management for the State of Alaska. His state service follows a distinguished career in seven federal agencies. He has held leadership positions in many national organizations. He is the past president of the National Emergency Management Association, co-chair of the National Mass Care Council, executive council for the Regional Consortia Coordinating Council, and a member of the National Homeland Security Consortium.*



# Opioids – Overdoses & Antidotes

By Joseph Cahill, EMS



According to the Centers for Disease Control and Prevention's (CDC) website, "Every day in the United States, 105 people die as a result of drug overdose, and another 6,748 are treated in emergency departments (ED) for the misuse or abuse of drugs." The CDC further states that opioids contributed to 16,651 deaths in 2010 and 420,040 ED visits in 2011. These numbers, of course, do not reflect the unreported number of people in the United States who are addicted to opioids – pain medications that include morphine, oxycodone, and the street heroin. An opioid that is five times more potent than heroin has appeared in the underground market – [fentanyl](#) and fentanyl-like drugs.

## Overdoses – A Deadly Trend

In the past year, health laboratories have been reporting [significant increases in overdoses](#) related to acetyl fentanyl. This "mass-fatality" incident is increasing across the country, even among seasoned users. The main response to narcotic overdose of all types is symptomatic support; if the patient is not breathing, the rescuer takes over breathing for the patient and administers the antidote called Narcan (Naloxone). However, getting the antidote to the patient in time to prevent death can sometimes be a challenge.

Over the past few years, emergency medical services have been using Narcan, but its deployment also has been expanding into fire and law enforcement agencies. This method of distribution ensures that the Narcan stays within the control of trained emergency responders who do not have an emotional stake in the patient. These responders tend to follow procedures and, by the nature of their assignments, often encounter users at the times when they are already in distress.

However, many other people also encounter users on a daily basis – including staff such as drug counselors and shelter operators. Public health officials manage most of these programs, which are under an order from that agency's physician. The use of this or any medication by unlicensed personnel has a host of issues that public health agencies must overcome. Although the Narcan

delivery device is noninvasive and relatively easy to use, there is a training component for knowing how to use it.

More importantly, authorized staff must understand the signs that indicate the need for its use, for example, a patient who is: unresponsive to vigorous shaking; has shallow, slow, or absent breathing; and/or is believed to have taken illegal opioids. The program medical director should design this training with input from the medication delivery device's manufacturer.

## Antidotes – Broader Lifesaving Capabilities

Although Narcan is available only by prescription, the depth of the overdose problem is such that some states have taken extraordinary action. Rhode Island, for example, has a "[blanket prescription](#)" that will allow anyone to purchase the medication at Walgreens. This action in effect bypasses the state and federal prescription medication statutes or, perhaps more accurately, meets the letter but arguably not the intent of those statutes. However, this also allows the family of a user to have the medication on hand in case of an overdose.

A final piece is to provide some degree of protection to those who, in good faith, attempt to save the victim of an overdose. "Good Samaritan" protection takes the assessment of risk out of the decision-making process. Since the immediate risk to the victim of an opioid overdose is that he or she will stop breathing, depriving the brain of life-sustaining oxygen, there is literally no time to waste. Narcan is an essential tool in the survival of overdose patients and, although its distribution is not without challenges, it is certainly a lifesaver.

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