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2. Create good habits
3. Develop a plan
4. Implement that plan

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Four Key Elements of Crisis Prevention

By Catherine L. Feinman

A crisis can occur when a situation becomes unstable, circumstances suddenly change, or tension and stress heighten. However, not all events need to reach the level of a crisis or disaster if proper preventative measures are taken. Preparing for and possibly preventing a crisis mean thinking outside the box, creating good habits, developing a plan, and then implementing that plan.

The first article uses the Cynefin Framework to provide a conceptual picture of the simple, complicated, complex, and chaotic aspects of the COVID-19 response. Such frameworks can facilitate and expedite the decision-making process for leaders during the emerging phase of an event. The second article describes how daily routines – good or bad – can significantly affect the productivity of preparedness and response efforts and ability to recover after an event. By developing these 10 good habits, preparedness professionals can adapt quickly to sudden changes and reduce stress and tension, which could otherwise turn a problem into a crisis.

The third article provides the basic information and components needed to develop an effective crisis response plan. Although this article focuses on schools, similar elements are essential for any crisis response plan: defined roles and responsibilities of all key stakeholders, effective communications and interoperability, accountability, logistical considerations, adequate resources, and recovery plan. The fourth article urges communities to prioritize and do something with their plans and initiatives. A plan without implementation serves little purpose. However, by allocating resources and executing plans, leaders can future-proof their communities from potential risks and threats and thus avoid incidents that would otherwise turn into crises.

This February edition of the Domestic Preparedness Journal shares these four key elements to help communities prepare for any crisis. This issue also contains two special announcements. First, the new Editorial Advisory Committee is now in place for 2022. Their broad areas of expertise will enhance the content and bring new ideas as the journal continues to serve preparedness professionals across disciplines and jurisdictions. Their service to their communities, their industries, and the journal are greatly appreciated. Second, this month marks the beginning of a new offering for Domestic Preparedness subscribers. New articles will also be available in an audio version called “Articles Out Loud,” which is located under the podcast channel.

Catherine L. Feinman, M.A., joined Domestic Preparedness in January 2010. She has more than 30 years of publishing experience and currently serves as editor of the Domestic Preparedness Journal, www.DomesticPreparedness.com, and the DPJ Weekly Brief, and works with writers and other contributors to build and create new content that is relevant to the emergency preparedness, response, and recovery communities. She received a bachelor’s degree in international business from University of Maryland, College Park, and a master’s degree in emergency and disaster management from American Military University.
Application of the Cynefin Framework to COVID-19 Pandemic

By Judy Kruger & Romeo Lavarias

Since the spring of 2020, variables such as mistrust of government leaders, anti-maskers, and economic concerns complicated COVID-19 community response. The Cynefin framework is a sensemaking theory in the social sciences to create a framework for emergency managers in large-scale events. It is useful because it can help identify the complexity of an infectious disease problem to inform resource allocation across many domains in the hopes of identifying gaps that can be addressed. This article looks at the pandemic as an event outside the realm of regular expectations due to the scope, duration, scale, and social climate.

In mid-March 2020, the World Health Organization declared COVID-19 a global pandemic. Some have argued that leaders should have seen a pandemic coming given all the influenza and other public health plans and exercises that were conducted over the past 10 years, but others say it was a “black swan” event given that no sector had been untouched. The duration of the pandemic has eroded trust in government leaders and has been a stress test for society. Regardless the level of precautions taken to restore health from COVID-19, communities need to be better prepared to deal with future pandemics. The Cynefin framework is a sensemaking theory that can help identify patterns within the complexity of an event to inform resource allocation across many domains, diagnose situations and shortcomings, and develop communication strategies to reach the masses.

Overlapping Crises

Complexity is more of a way of thinking about the world than a new way of working with mathematical models. Regardless how convoluted a situation is, especially when trying to decipher case counts, hospitalizations, or deaths, and gauge government support for infectious disease public health measures to maintain standards of public safety, decision-makers need to stay connected to what is happening in order to spot change in context (or patterns). Since COVID-19 has led to over 910,000 deaths in the U.S., decision makers need to make policy decisions about ways businesses can safely reopen based on biomedical advances and the availability of personal protective equipment (PPE), masks, vaccines, antiviral pills, and other supplies. In 2021, the U.S. was in the midst of several overlapping crises (e.g., health, economic, social, political, educational, commercial) and the cost for not having prepared for this large-scale incident appears to be higher than the cost of anticipating and preventing the spread of the virus. In addition, emergency management capabilities were overextended because 2021 was deemed by the National Oceanic and Atmospheric Administration as another historical billion dollar disaster year in terms of the number of extreme weather events due to floods, severe storms, cyclones, and a large wildfire, drought, and winter storm/cold wave.
A Framework for Knowledge Management

The Cynefin framework allows decision-makers to diagnose situations and act in contextually appropriate ways, since complexity plays off multiple unknowns and variabilities to allow solutions to emerge. This framework sorts the issues facing decision-makers into four quadrants (simple, complicated, complex, and chaotic) defined by the nature of the relationship between cause and effect. It can help emergency managers sense if the incident is simple, self-evident, and easily addressed with a standard operating procedure or if it is an irrational or unpredictable problem that would fit into a complex domain. Three tenets that can be put into practice to shift decision-making include:

- Sense of temporality of a situation, which refers to an instinctual sense that in the moment something complex is simple
- Perspective of complexity, which depends on one’s perspective of a catastrophe and experience in taking the perspective from medical providers on how to handle
- Historical patterns of behavior during past pandemics and public opinion on how to stop the spread

The COVID-19 pandemic has led to a call for action to invest in public health preparedness and prevention actions to secure the country’s future economic security, loss of loved ones, and human suffering experienced by individuals and families directly affected. COVID-19 caused high mortality and morbidity in the U.S. and around the world and, in some cases, led to public panic. Despite all sensitizations done by the government about preventive measures (e.g., handwashing, wearing masks, social distancing), people often have not been following them in their daily life. The spillover effect from people’s experience of COVID-19 has led to a pervasive sense of fear and stress and may have resulted in relational problems due to physical distancing from loved ones, friends, and communities.

A 16 September 2021 report by the National Emergency Management Executive Academy Cohort VIII (Team 3), “Post-Mortem Analysis of Community Response to the COVID-19 Pandemic with Recommendations for National Preparedness,” conducted an evaluation of real-world experiences during the COVID-19 response. Views captured from all levels of government were summarized into five lessons learned:

- Communications (e.g., lack of communications and coordination between agencies and partners with mixed messages)
- Training (e.g., Lack of familiarity with ICS/NIMS which inhibited unity of effort between public health and emergency management and a need for cross-training at all levels)
- Financial/Logistics and Supply Chain (e.g., No prioritization of PPE, testing equipment, ramp up production)
- Integration/Coordination (e.g., No integration across public/private partnerships and a need for information sharing to ensure a unified national response)
- Federal vs. Federalist (e.g., lack of consistent guidelines and cultural/political obstacles to resolve challenges)
Applying the Framework to Masking

The Cynefin framework is useful for knowledge management and is still applicable two years after the start of the pandemic, since the virus has mutated into a highly contagious variant strain, infecting people who had been previously vaccinated, causing death, and resulting in a workforce healthcare crisis. The *Harvard Business Review* article by David J. Snowden and Mary E. Boone suggests the framework has application when leaders are required to diagnose situations to make decisions.

The authors applied this framework to mask use during the COVID-19 response and showed disorder applied to across each quadrant. The authors present a conceptual picture using the framework in the four quadrants (simple, complicated, complex, and chaotic), but they are not separate stages with clear boundaries:

- **Simple** – lack of communications and coordination between agencies and partners at all levels to support standard operating procedures
- **Complicated** – changing supply chain logistics and prioritization of PPEs from single cloth masks to KN95, N95, surgical, or double masks
- **Complex** – unsatisfactory communication on how infectious diseases spread and coordination between emergency management and public health
- **Chaotic** – lack of coherent, consistent guidelines from the federal government

In this article promoting the wearing of masks could be considered a *simple* standard operating procedure. Research studies have demonstrated the cause-and-effect relationship supporting the protective action of masks against COVID-19, provided masks are worn properly to reduce face-seal leakage.

It becomes *complicated* when public health professionals make claims on which masks are better. The public relies on experts to conduct analysis to make sense of the various types of masks, and how to prioritize limited resources when shortages of masks exist in hospitals and medical facilities.

Face masks becomes a *complex* problem when public reaction from groups of people believe their freedom and civil liberties are infringed or when political leaders refuse to follow scientific guidelines. What makes it complex are group norms and beliefs that make human behavior less predictable. Mask use remains a controversial topic for a significant portion of the U.S. Various policies have inspired defiant and even violent behavior over the right to wear or not wear one. Complex problems require decision-makers to look for patterns. Even during the 1918 pandemic, a proportion of the population wore masks, and some did not.

It becomes *chaotic* when the rules of businesses or store owners are violated by people refusing to wear masks. The cause and effect of noncompliance leads to altercation or violence at a store that requires masks to enter. Action is needed to ensure that standards, policies, and procedures are clearly defined and enforced. Better government efforts to address misinformation through public service announcements (with accurate information about COVID-19 and ways to stop the spread of the disease) could have been
taken to empower citizens, reduce fear and resistance to masking, and more rapidly restore health and normalcy to the economy.

**Building a Collaboration Force**

To accelerate decision-making, emergency preparedness professionals can apply a new crisis leadership concept at the start of a crisis by including a rapid reflection force (RRF) comprising leaders from different backgrounds to help chief executives grasp and confront issues raised by unconventional situations. Real-life incidents and exercises have shown that RRF can help prevent the fall into crisis by bringing in a new perspective in an operative context. In Switzerland, the federal government brings in an RRF to assist with the development of a sense-making plan for complex crises.

Open sharing with diverse groups can account for the cascading effects and help expand solutions that may be blinded to counterintuitive responses based on experience, training, and success. Introducing multiple perspectives also could help shine a light on behavioral or economic outcomes previously not considered to help prevent conditioned responses. To confront emerging infectious diseases in a way to flag alternative solutions based on early warning triggers could prevent issues from being oversimplified or incorrectly classified (in the context of a chaotic and simple, or complicated and simple problem).

The pandemic has revealed that the U.S. is unprepared to deal with future pandemics given the scale of disruption that COVID-19 has caused. To assist with proper situational understanding, the Cynefin framework could be used by all levels of personnel (strategic and tactical) during focused assessments. Tabletops, exercises, and cross-collaborative trainings among public health, emergency managers, and other key stakeholders could help prepare for future infectious disease threats and address gaps in preparedness plans that challenge public health emergency management. There is a need for collaboration and further coordination to confront emerging diseases and adopt a proactive versus reactive stance to assimilate complex concepts with real-world problems. The Cynefin framework should be used to enhance communications and decision-making when trying to make sense of a rapidly unfolding situation and to understand the response options to develop open-minded mitigation strategies.

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Top 10 Habits for Better Crisis Preparedness

By Andrew (Andy) Altizer

Imagine an important grant application deadline approaching next month, delaying the submission for a couple weeks, but then a critical incident happens (perhaps, something like a pandemic) that diverts attention for weeks, months, or much longer. The routine tasks that require action are not performed in a timely manner, and the deadline for that grant application is now gone. Developing some small habits like prioritizing would have significant effect on productivity and effectiveness of response and recovery efforts for a future crisis.

When time permits, in-depth quantitative research offers valuable information for disaster preparedness and response. However, the foundation of preparedness is rooted in the day-to-day activities that prevent small events from becoming big crises and help manage large events that cannot be avoided. As such, the following little habits can have big effects both operationally and administratively for any emergency or disaster.

Key Habits to Better Preparedness

By incorporating the following 10 habits into daily routines, emergency preparedness professionals will be better prepared to manage and adapt to any sudden or evolving events.

1. Prioritize – It is vitally important to prioritize. As Stephen Covey (author of *The 7 Habits of Highly Effective People*) pointed out, ”put first things first.” It is also important not to neglect less important but necessary tasks. These less important – or perhaps not as urgent – responsibilities can become problematic when suddenly faced with a sustained situation that demands significant amounts of time.

2. Save all contacts and cellphone numbers – It is difficult to predict exactly when help will be needed and from whom. Trying to find the right contact when needed can be an exhausting and time-consuming process when time management is crucial. So, the best practice is to immediately save any new contact. It is an invaluable trait to always have the right contact and phone number at the ready whenever needed.

3. Get out of the office – This is not a new piece of advice, but a critical one. Getting out of the office enhances situational awareness, builds relationships, and often provides the subtle motivations that drive emergency preparedness efforts.

4. Write it down – Emergency preparedness professionals are often overwhelmed with tasks and changing priorities, so it can be easy to forget obligations. Relying on an electronic calendar is great, but sometimes having a physical list of tasks posted in strategic locations can serve as a better daily reminder that is more difficult to ignore.
5. **Build relationships** – Relationships should be vertical as well as horizontal. One of the tenets of the emergency management profession is to build relationships, with an emphasis on collaboration. However, it is vitally important to continue expanding these relationships with people several levels down. Chiefs, directors, managers, etc. will retire or suddenly leave. As their subordinates move up, how they perform their new roles and treat others may depend on how their superiors treated them.

6. **Build capacity** – Emergency managers plan for the worst, but limited resources often collide with competing and more timely needs – especially when planning for less likely scenarios. Building capacity should begin now and continue until all necessary resources are acquired. For example, when planning for a shelter, there may not be enough funding to purchase 50 cots. Preparedness does not require an all or nothing approach. Start with 10-15 cots this year and continue each year until there are enough for a fully equipped shelter. As an old Chinese proverb says, “The best time to plant a tree was 20 years ago. The second-best time is now.”

7. **Tie in the Overarching Organizational Mission With Every Task** – Often, simply highlighting public safety or continuity of operations can provide critical reminders to ensure that emergency management functions remain a priority within the organization.

8. **Dress for the Day, but Have a Change of Clothes** – Be prepared for sudden and unexpected changes. There are plenty of people who still do not know what emergency managers do daily. The emergency manager’s role is evolving and is often misunderstood, with many people still confusing “emergency management” with “safety and security.” Wearing cargo pants and an emergency management polo is a small, but important, way to demonstrate that emergency management is an integral part within the overall organizational professional staff. In addition, be ready to pivot when suddenly thrust into responding to a crisis out in the rain while wearing a coat and tie.

9. **Expect to Be Audited** – Sometimes emergency managers procure items that raise red flags to those not familiar with the responsibilities and duties of the job. These red flags may generate an audit. Planning for a worst-case scenario does not fit neatly within the normal supply needs. In addition, most equipment purchases are often subject to auditing. However, auditing may include plans as well as equipment. Emergency preparedness professionals should welcome any audit that will strengthen these plans and the overall operation.

10. **Think transparency** – Keep in mind that most written communications and documents are subject to open records. Although transparency should be the standard, avoid including any personal opinions in emails and social media.
Additional Tips to Maintain Perspective

In addition to the habits above, there are a few more tips that can help emergency preparedness professionals develop more robust professional perspectives:

- Emergency management demands leadership. Egos do not belong in community-based professions. Become a good listener, build and maintain trust, and never forget the importance of empathy. Give credit often, and fully embrace the enormous benefits of teamwork.

- Do not forget to be a good follower. This is especially important within the Incident Command System, where emergency managers are seldom the incident commander but are always critical in supporting roles.

- Finally, have a family plan for times when work takes priority. Not only will such planning prove valuable to family members, but it also will reduce personal stress levels during stressful times. Remember that taking time off is not only deserved but is also needed at times.

Now, with the grant application, knock it out as soon as time permits. Do not wait for downtimes or breaks in schedules because these opportunities are rare. Update “to do” lists to ensure that daily habits provide ample opportunity to knock out less pressing tasks – like submitting a grant!

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Essentials of a School-Based Crisis Response Plan

By Mary Schoenfeldt

School crisis response plans come in a variety of formats. Although the structure may vary, the content must include the essentials for the plan to be usable and effective. A basic school-based crisis response plan has seven key elements: organizing structure, communications system, accountability system, parent/student reunification, alternative location, equipment and supplies, and aftermath/recovery plan.

First, there must be an organizing structure that clearly outlines roles and responsibilities. The organizing structure that is recommended for schools in the United States is the Incident Command System (ICS). The National Incident Management System (NIMS) was created to standardize response of not only emergency responders, but other government agencies, such as schools. The ICS is a component of NIMS and creates a common language and understanding of roles and responsibilities during an emergency. Many instances could be cited where a response was hampered because the agencies involved had to take the time during the crisis to figure out how to interact with one another. The resulting delay caused loss of property, injuries, confusion, and frustration.

The ICS is applied by function rather than personalities or titles and can either expand or contract as the crisis unfolds or resolves. For most schools, ICS concepts are familiar, but the language may be awkward or unfamiliar. Most schools need only to change titles and add a few new components to their already existing Crisis Response Team structure to adapt to the ICS. The time and resources to make the adaptations are well worth the effort.

The next essential for a crisis response plan is a communications system for all areas. The ability to communicate between all areas of the campus is a must. Procedures for communicating with students, staff, district office, parents, and the community in all phases of the crisis are necessary. A written communications plan for handling the media is also recommended. A crisis communications plan provides policies and procedures for the coordination within the organization as well as those outside the organization such as other agencies and/or parents (e.g., see Everett Public Schools Crisis Plan). Plans can be written by the Crisis Team or the district Communications Department but should have approval of administration.

The key to the plan is for all departments and spokespeople to give consistent information from the beginning of the crisis. This helps create credibility and trust. Time is critical during an emergency, so a crisis communications plan should outline who has authority (ahead of time) to create messages and speak for the district. This avoids delays in distributing information if messages were to go up the chain of command for approval. Preparing templates in noncrisis times ensures they are ready with fill-in-the-blank spaces for specific details when a crisis occurs. The plan should outline procedures for all forms of communication (e.g., digital alerting systems, public
address systems, social media, web-based platforms, email notification of staff, media releases), press conference procedures, and designated spokespeople. The crisis communication plan is a component of the overall crisis plan and should also include a job description of a public information officer (PIO), who is part of the overall command structure (see Figs. 1-2).

**Maintain Order and Accountability During Crisis**

An *accountability system* is a cornerstone of an effective crisis response plan – a system whereby all people, students, and adults, on a campus can quickly be accounted for. For crises that cause mass confusion (e.g., an explosion in the chemistry laboratory, an intruder, a wall collapse), the sooner the whereabouts of everyone on campus are ascertained, the sooner order can be restored. Accountability can come from classroom attendance lists, sign in lists for the library, or other non-classroom sites. If the school
needs to evacuate, staff has the responsibility for doing accountability for those students under their supervision. This includes not only classroom teachers but the librarian, cafeteria staff, counselors, and others on campus.

If the safest action is to stay inside, accountability can be done by email, calls to the office, or some other method. In the plan, a group should be designated to immediately
begin accountability efforts and update as needed to maintain current lists. The information from this team then is shared with parent reunification, command staff, and others as needed – always being sensitive to not let the information become public if there are students or adults still missing or injured. Accountability systems need to be designed to quickly account for everyone on a campus or in a district facility, including students, staff, visitors, vendors, itinerant staff (see Fig. 3).

The next essential is a parent/student reunification plan (see Fig. 4). Parents are going to be intent on getting information and connecting with their child to know they are safe. By preplanning, a system would be in place that allows children to be calmly released to the appropriate person and provides proper documentation that may be needed later.
Suddenly In Command: Grab and Go Resource
OPERATIONS – FAMILY REUNIFICATION, PARENT/STUDENT CENTER

General Duties
➢ Sets up Parent Center
➢ Gets info from Accountability Team
➢ Should have an Administrator present
➢ Documents person picking up child
➢ Have interpreters available
➢ Responsible for setting up evacuation or sheltering site
➢ Coordinates the supervision of students until released
➢ Works closely with the Parent Student Reunification team
➢ Report to Operations Section Chief

Checklist
• At direction of Operations Section Chief, contact predetermined Parent Center to advise of our intention to begin setting up
• Mobilize parent release center team
• Gather supplies
• Ask Logistics for more help if needed
• Post signs to direct parents to designated location
• Assemble forms to be used to document release of students
• Work with Accountability Team to get list of injured or missing persons
• Access Mental Health Crisis Team and set plan for dealing with people inquiring about missing or injured persons
• Assign an Administrator to be present or easily accessible
• Station Interpreters in appropriate places
• Set up Parent Center
• Get information from Accountability Team
• Have an Administrator present or nearby
• Document person picking up child
• Coordinate the supervision of students until released
• As soon as possible check in with own family
• Report all activities to the Operations Section Chief or Document all actions taken and provide paperwork to Administration/Finance when crisis is over
• Participate in plan and response evaluation sessions

Fig. 4. Suddenly In Command: Grab and Go Resource for Reunification (Source: ©2022 Schoenfeldt and Associates, yoursafeplace@msn.com).
to know where a particular student has gone and with whom. However, there are two tasks that parents require immediately – even before they are reunified with their students:

- **Information** – Even if all the information is not yet available, give them what is known and update them frequently.
- **The sense that someone is in control** – When a process is in place that parents know and trust, it makes a significant difference.

The key components of the parent/student reunification plan should include at the minimum:

- A check-in gate for parents
- A location where students are being accounted for and supervised
- A separate location than either of the two above where parents and students are reunited
- A procedure for requesting a certain student
- Adequate staff and security to handle the crowd of parents
- A sign-out procedure to know which students have been picked up and by what adult

An *alternative location* for students to be moved must be outlined ahead of time. It is suggested that at least two locations be designated. One that students can be bussed to if transportation is available and another that may be an intermediate location that students can walk to while awaiting transportation. If using a neighborhood church or similar location, it is advisable to have a written agreement in place.

*Equipment and supplies* are a must to have what is needed when it is needed. Equipment needs will vary, but the basics include two-way radios, identification vests, signs, paper and pens, first aid kit, checklists, and a hard copy of the response plan.

**Recover More Rapidly After an Event**

The final essential element of an effective crisis response plan is an *aftermath/recovery plan*. A crisis that impacts a school community lasts longer than the first response phase that might bring emergency responders to campus. A crisis is an emotionally significant
event, and students and staff must be supported to help them come back to a sense of normalcy and to avert the risk of post-traumatic stress syndrome because of the event. More than half of all people exposed to a critical incident experience symptoms ranging from sleep disturbances, eating disruptions, and intrusive memories to fear, agitation, anger, and blame within the first three weeks. Students and staff alike need to be given the opportunity to express their feelings and learn that they are having a normal reaction to an abnormal event.

An aftermath plan should include the following:

- **List of resources available to assist and activities that can be used in classrooms, safe rooms, and meetings** – A “safe room” is a designated space where students can go if they are having difficulty maintaining their composure in a regular supportive classroom environment. It should be staffed by at least two people and equipped with tissues, drawing and writing materials, stuffed animals, appropriate literature, and refreshments such as cookies and juice. A separate “staff safe room” may be needed also. Note: This is not open permission to leave class and wander the campus. A procedure must be in place with a hall pass and attendance being taken as students come and go both in the classroom and in the safe room.

- **Immediate activities, done before anyone leaves campus** – These might include conversations about the impact, information on immediate stress management, and information on the resources that are available that day and will be available the next day.

- **Activities that will be done for the next few days, weeks, and even months (takes into consideration trigger events such as anniversaries)** – These can include stress management activities, counseling conversations, grief and loss groups, acknowledgement of loss activities (not on-campus funeral or memorial services), and empty desk syndrome actions that are guided by school crisis mental health professionals.

The aftermath plan sometimes is seen as separate from the crisis response plan but is an essential component for the plan to be complete. The actual format of a school crisis response plan may be variable, but it must contain these seven essentials to be useful and effective. By leaving one or more of these pieces out, schools will find it difficult in an emergency to accomplish all that they must to bring the crisis under control quickly.

Dr. Mary Schoenfeldt is an emergency management professional with a specialty in school and community crisis. She was tasked with creating the job description and filling the job of director of recovery for a school district following a mass murder suicide in a high school cafeteria. Her experience includes assisting schools such as Columbine High School, Sandy Hook Elementary, and many others over the years as they struggled to not only respond but to recovery from incidents no one imagined would happen to them. She has also trained and consulted with hundreds of schools that have not made the front-page headlines. She is available to assist other communities and school systems. She can be reached at yoursafeplace@msn.com.
Future-Proofing Infrastructure Supports Community Resilience

By Ryan Colker

With communities around the globe feeling the effects of climate change, society must continue to prioritize initiatives that address its causes and impacts. For example, in mid-December 2021, 61 tornadoes formed in the central U.S. when such intense events are unusual, and Texas and Oklahoma saw a winter storm and freezing temperatures in February 2021. Additionally, according to the National Oceanic and Atmospheric Administration (NOAA), the U.S. experienced 20 major disasters in 2021 totaling $145 billion in damages and resulting in 688 deaths – ranking as the second-highest number of events, the third-highest cost, and the sixth highest deaths. Coupled with the continuation of high-powered storms with the rising costs of construction, labor, and materials, communities run the risk of entering an endless cycle of destruction and rebuilding.

Buildings and infrastructure built today must be designed and operated to withstand the risks they will face across their life cycles (often 50 years or more), including lowering greenhouse gas (GHG) emissions that drive some of these changing risks. With that in mind, community leaders and emergency managers must make building resiliency and future-proofing a priority by implementing policies and practices that both enhance resilience against the impacts of climate change and lower emissions. Building codes (including energy codes) are at the core of these solutions.

Future-Proofing Saves Money, Resources, and Lives

When building new or retrofitting older buildings, a holistic approach must be implemented. Identifying opportunities to capture co-benefits or leverage existing policy tools will be essential for a coordinated approach. For example, Property Assessed Clean Energy (PACE) programs – once only focused on energy-related improvements – have expanded to support resilience investments in several states. For this reason, energy audits or weatherization improvements should be married with resilience audits and improvements to leverage an owner’s attention and investment.

Energy efficiency measures have been shown to enhance social resilience by lowering energy burdens in low- and moderate-income households, allowing residents to remain comfortably in their homes during a power outage (which reduces pressure on shelters), and lowering stress on the energy grid. More resilient structures also contribute to sustainability by reducing the waste generated by both ruined personal belongings and damaged buildings. These resilient structures also do not need to be rebuilt, reducing the need for new building materials.

Furthermore, the U.S. Department of Energy (DOE) recently concluded that, by 2040, updated energy codes and standards could save $138 billion in energy costs. This is equivalent to the emissions of 195 million passenger vehicles, 227 coal power plants,
or 108 million homes. These statistics further highlight the potential savings power that up-to-date building codes offer to local and national economies.

The 2021 International Energy Conservation Code (IECC) provides an immediate pathway to increased sustainability, providing energy savings of 9.4% and GHG savings of 8.7% over the 2018 edition and about a 40% improvement since 2006. The 2021 IECC also saves homeowners an average of $2,320 over the life of a typical mortgage.

**Collaboration is Key to Building a Resilient Future**

The current federal administration has recognized the need to update communities, emphasizing the implementation of up-to-date building codes throughout the country. The *Infrastructure Investment and Jobs Act* will allocate millions in federal funds to provide local and state jurisdictions with the resources needed to update and implement modern building codes. Furthermore, federal programs such as Building Resilient Infrastructure and Communities (BRIC) provide state and local officials with access to funds aimed at encouraging the adoption and implementation of natural hazard-resistant building codes.

These federal programs are an essential step toward increasing the overall resilience of communities. Building codes are an effective and cost-efficient way to accomplish this increase in resiliency and sustainability. The Federal Emergency Management Agency (FEMA) found that if all future construction were built to the latest edition of the International Codes (I-Codes), the U.S. would avoid more than $600 billion in cumulative losses from disasters by 2060.
The Code Council recognized the role of state and local governments in driving action to achieve their sustainability goals and the importance of having tools and resources that support these actions. The Code Council Board of Directors released a new framework, *Leading the Way to Energy Efficiency: A Path Forward on Energy and Sustainability to Confront a Changing Climate*, providing a multi-pronged approach to delivering energy efficiency and other GHG reduction strategies including through the IECC and additional resources to be developed that will sit alongside the code.

Adopting and implementing modern building safety codes, like those developed by the International Code Council, provide communities with confidence that both new residential and commercial buildings would be designed and constructed to support their resilience and sustainability goals. However, that same FEMA study found that 65% of counties, cities, and towns across the U.S. have not adopted modern, hazard-resistant building codes.

**Evolving Codes to Address Evolving Risks**

As climate-related hazards evolve, building codes and standards must keep up to assure that buildings continue to provide the appropriate level of protection. While there is growing recognition that the risks buildings will face in the future are different than the past, the methodology for addressing these changing risks through codes and standards is not yet settled. Understanding the importance of this ongoing challenge and the opportunity for international collaboration on solutions, the Global Resiliency Dialogue, a voluntary group of building code developers and researchers from Canada, Australia, New Zealand, and the United States, have come together to identify solutions.

In January 2021, the group released its first report identifying how current codes use climate data, the sources of that data and how frequently it is updated. A second report released at COP26 in November 2021 captures key considerations and potential strategies for codes and standards that include future-focused climate data. These two reports will feed into International Resilience Guidelines to be released later this year that provide a framework and principles for incorporation of evolving risk in codes and standards.

Communities are only as resilient as their weakest links, making it vital that local officials implement holistic programs that address both sustainability and resiliency. Buildings are shelters against the elements, the homes of families, governments, and institutions, and drivers of economies. As such, policies at the national and sub-national levels must include a strong focus on current and future buildings to achieve net-zero emissions and enhance community strength.

Ryan Colker is the Code Council’s Vice President of Innovation. He works to identify emerging issues in the building industry, including how new technologies can be leveraged by codes and standards, methods to modernize the application of building regulations, and the development of new business strategies that support members and building safety professionals. He also serves as executive director of the Alliance for National and Community Resilience. Prior to the Code Council, he was the vice president of the National Institute of Building Sciences, where he led the Institute’s efforts to improve the built environment through collaboration of public and private sectors. Before that, he was the manager of Government Affairs at ASHRAE.
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