

CRISIS MANAGEMENT in the Chemical Industry

CHEMTREC's State of the Industry Report 2021-2022

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CHEMTREC Crisis Solutions



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Bruce Samuelson
Chief Executive, CHEMTREC

Foreword

The chemical industry plays such a vital role in our modern world. We often take for granted the impact that advances in technology and innovation are directly dependent on the business of chemistry. From lightweight materials used in the transportation industry, to handheld technology and life-saving medicines, modern chemistry makes this all possible. And with the increasing demand for products and services on a global basis, the chemical supply chain is increasingly being pushed to new limits.

At the same time, our modern world is changing in many significant and challenging ways that should cause us to take notice and understand how the chemical industry can adapt and change in sustainable ways to ensure it will continue to meet the demands of society.

The unprecedented risks associated with a global pandemic, extreme weather, advances in technology, the geo-political landscape, and the interconnectedness of our modern world can expose our industry to a much wider set of hazards and threats each and every day. We live in a world of even greater unknowns, which may require a different and thoughtful approach to the way we plan for, respond to, and recover from disasters and emergency situations.

As our threat landscape changes, one thing remains constant, CHEMTREC's commitment to safety and high-

level incident response across the industry. Whether it be a pesticide exposure, paint spill, or lithium battery malfunction, CHEMTREC's 24-hour emergency call center is a key first step of hazmat emergency response during a hazardous materials incident, or indeed any incident through their Crisis Solutions service. This survey, conducted by our team here at CHEMTREC, provides a number of valuable insights, which can not only help to protect our own businesses from the impact of disasters, but can also serve to help protect wider communities from harm.

When it comes to crisis management, doing the basics well is the first and arguably one of the most important steps a business can take to safeguard its people, environment, assets, and reputation. The findings of this survey and the accompanying commentary outline what these basics typically include. What is clear, is that to tackle the challenges of tomorrow, it is vital we work together, guided by expertise. The "Improving the Industry" section echoes these sentiments; there is a clear wish to work together, through working groups, to develop excellent practices, templates, and other resources, and I look forward to being part of this mission. I hope the report provides some comfort, knowledge, understanding, and comparative contrast to highlight our industries' readiness to face the challenges of tomorrow.

CRISIS MANAGEMENT **in the Chemical Industry**

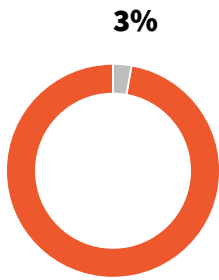
Executive Summary



Executive Summary

We're pleased to introduce CHEMTREC's State of the Industry Crisis Management Report, featuring responses from leaders across the chemical industry and supporting industries such as mining, oil and gas, and more specific chemical specialties. The companies range from small businesses to large multi-national companies, all seeking to improve their crisis management capabilities and understand excellent practices.

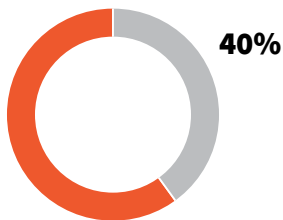
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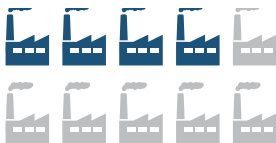
- Many organizations across the chemical and high-risk sectors have excellent emergency response capabilities, but not all have adequate plans, protocols, or people in place to coordinate the wider impacts of an incident. This means while an organization is likely to prevent harm to its people and the environment, it may not have plans in place to prevent harm to its assets or reputation. Almost a third of businesses surveyed (28%) reported under-prioritizing crisis management, with 63% of planning being coordinated by management or department teams rather than at a c-suite level (19%). Less than 3% of organizations surveyed employ a full-time crisis management professional.



- More training and development would be beneficial across the industry. Based on the survey, 4 in 10 people recognize an opportunity to improve their capability to coordinate a wider crisis response.



- More validation, and assessment of crisis planning is critical across the industry to assess whether plans and processes are fit for purpose. While two thirds of surveyed companies reported testing their plans in the last year, almost 20% of organizations reported that they have not validated their plans; this figure rises to almost 40% for those who reportedly have not validated their plans within the last year.



- Integration is crucial. 61% of the companies surveyed reported that they do not understand how their business continuity plans and crisis management systems work together to provide a holistic response, highlighting room for further improvement and the need to focus on the protection of its assets.

There is a clear appetite to improve these capabilities, with all respondents highlighting areas where they are seeking support moving forward. The industry can come together to help itself. Through working groups and sharing exemplary practices, the industry can look to develop training programs, templates, and other guidance and support, that could help the 97% of people preparing their organizations while also doing their day job. Preparedness is crucial and is part of the industry's commitment to safety. We should aim to do more to help organizations protect people, the environment, our assets, and reputation. This is at the heart of good crisis management planning.

CRISIS MANAGEMENT **in the Chemical Industry**

What is Crisis Management?



What is Crisis Management?

The world we live in is full of risk, and now more so than ever before. With the ongoing COVID-19 pandemic, global warming, and the increasing risk of cyber threats, risk is not only more present but also often more severe and unpredictable. Research by the International Federation of Red Cross and Red Crescent Societies (IFRC) shows companies are up to 35% more likely to be impacted by a natural disaster now than they were 30 years ago, and incidents on the other side of the world can lead to major crisis events for our organizations.¹

To combat this risk, we should recognize the ever-changing threat landscape and be strategic about deploying protective measures that aim to mitigate risk factors. We also need to accept that risks will sometimes be realized, that is, despite our best efforts to mitigate them, there is still a chance they will occur, and that when they do, there is a real and present danger to our organizations. Some of the risks are so severe they can threaten the very existence of an organization. Over a 40-years study conducted by Aon and Pentland Analytics², reputation crises destroyed USD \$1.2 trillion in shareholder value, with an average impact of -8%. Many organizations do not recover from crisis events, particularly those which go on to affect their reputations, and studies show that brand and reputation is worth an average of 26% of market capitalization. How then do we deal with these risks? Can we take steps to mitigate this potential 8% decline in shareholder value?

The answer is yes, and crisis management is a central solution. Crisis management is a process of threat identification and response by an organization in order to protect its staff and the wider public, while maintaining a safe operating environment. Crisis and emergency management can minimize the impact of any incident on the local environment and the organization's assets, maintain the organization's reputation, and even enhance it when responding to a situation. Aon's study shows that those impacted by a crisis generally fall into one of two groups: winners and losers. There is a 40% differential in shareholder value between the winners and losers. Winners see a 21% increase in shareholder value, thanks to their effective handling of the incident (equivalent to USD

\$1.2 trillion), losers see a 21% loss in value (equivalent to USD \$2.4 trillion). The difference between the winners and losers: effective crisis management consisting of a commitment to preparedness, leadership, action, communication, and change.

Companies often survive or fail based on the strength of their crisis management programs. If any other intervention was presented to a board, with the potential to make a 40% difference in shareholder value over competitors, it would almost certainly be snapped up. Despite this, crisis management was recently described by one leader in the chemical industry as an 'orphan' area, often overlooked by organizations who may be more focused on tangible benefits, rather than 'what ifs.' This is highlighted within the survey findings, with ownership of crisis management only sitting at the c-suite level in 19% of companies surveyed and less than 3% of companies having a full-time dedicated crisis management professional.

There is no expectation that c-suite individuals undertake crisis management planning, but it benefits from executive sponsorship, as would any other issues with the potential to have such significant impact on shareholder value over organizations operating in the same space. Executive sponsorship facilitates key risks being given the priority they merit and investments being made in appropriate mitigation and preparedness efforts. Investment in capabilities and time to properly train individuals is key.

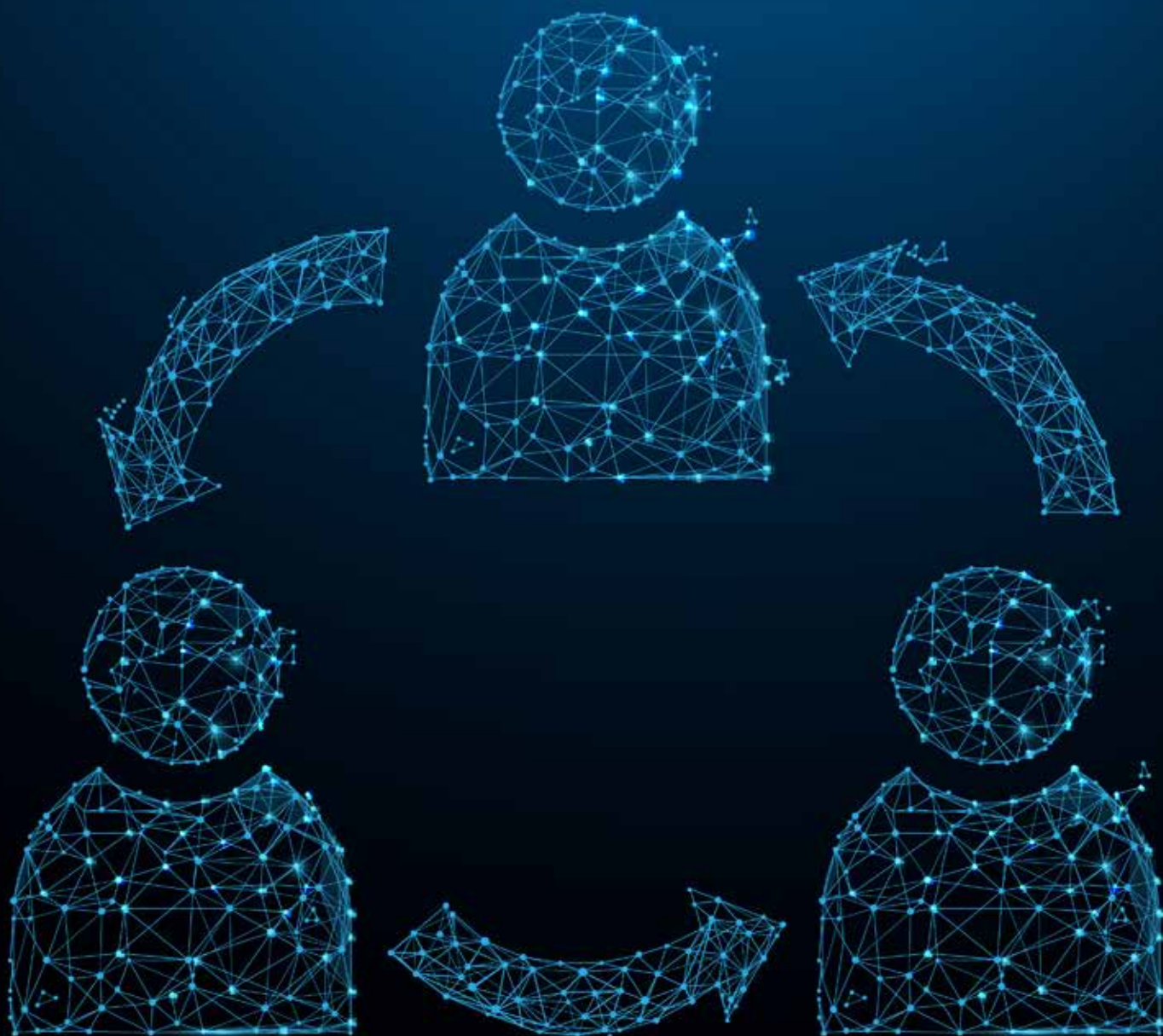
Given the potential scale and complexity of implementing a crisis management program, a dedicated full time professional is preferred, who has the skills, knowledge and experience required to create plans, deliver training and implement an exercise regime which tests the effectiveness of those plans. 97% of organizations surveyed do not have this, often adding this to the portfolio of a health and safety manager, security manager, or compliance specialist, who are often already stretched with their own workload. Crisis management is typically a specialist role, requiring specialist skills and knowledge. Organizations should consider employing or working with specialists to enhance their capabilities.

¹ International Federation of Red Cross and Red Crescent Societies, 2020. World Disasters Report. [online] Geneva: International Federation of Red Cross and Red Crescent Societies, p.31. Available at: https://www.ifrc.org/sites/default/files/2021-05/20201116_WorldDisasters_Full.pdf [Accessed 14 April 2022].

² Pretty, D., 2021. Respecting the Grey Swan: 40 years of Reputation Crises. [online] London: Aon/ Pentland Analytics, p.14. Available at: <https://www.aon.com/getmedia/03965282-4d98-49c3-9e4c-97d4fbfb2c3e/Respecting-the-Grey-Swan.aspx> [Accessed 14 April 2022].

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Training and Response



Training and Response

Organizations within the chemical industry are familiar with operating in a high-risk environment and may deal with minor incidents on a regular basis, providing an opportunity to rehearse what it likely to be an effective emergency response. This can in itself create an issue, due to the effectiveness of the industry's emergency response capabilities, larger crisis situations rarely occur. This means responders have little chance to practice the skills required for the wider coordination of an incident. In order for staff to respond to an incident proactively, effectively, and safely, they will need the skills, knowledge, and tools to do so in line with their assigned role. However, problems can arise when these skills and assigned roles are not tested and experienced in a controlled environment prior to the onset of a real situation.

In the event of a crisis, it is too late to pick up the crisis management plan for the first time and start from scratch. The pace of most crisis situations demands rapid decision making to minimize impact, otherwise the crisis will escalate further. An in-depth understanding of roles and responsibilities is therefore essential for crisis and emergency management personnel. Our survey found that 4 in 10 people do not understand their crisis management and emergency response roles and responsibilities. This means even where the organization has invested in crisis management plans and capabilities, there is still a 40% chance that the organization becomes one of the losers in crisis management, i.e. one of the organizations that will experience a 40% negative differential in shareholder value following an incident. Unsurprisingly, 30% of organizations surveyed want more frequent training and 31% have not trained in the last two years. However, 15% of these do not undertake any training at all.

Most organizations clearly recognize the need to train but require additional support to implement this. Respondents highlighted the following issues:



Lack of financial backing:

If a business case was presented to a board stating that an intervention could provide a 40% advantage over competitors,

investment would likely be found. Crisis management training merits being treated similarly. We can make better business cases supporting investment in training.



Complacency:

As crisis consultants, we are often busiest after a company has had an incident, when it realizes it should have had a plan in place. The research suggests for some companies, it may already be too

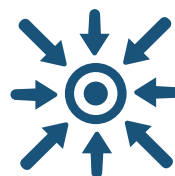
late at this stage and the company will often be on a significant downward trajectory. The frequency and severity of crisis situations will likely increase moving forward; if your organization has not yet been hit by a crisis, the chances are that it will be at some point.



Employee Participation:

Training should be engaging and deliver value to employees. Too often traditional crisis management training has involved learning the contents of a plan, rather than giving responders the

skills needed to think and act effectively. To deliver an effective response during times of crisis, upskill responders in non-technical skills. Non-technical skills support responders to think on their feet and make effective and dynamic decisions to respond proactively, giving an increased chance of getting the incident under control at the earliest opportunity. The plan then becomes the underpinning handrail of support.



Lack of specificity for the industry:

Tailor training to the specific industry, offering both technical and non-technical training solutions. The chemical industry

presents unique challenges and usually requires a specific set of skills. Training providers should aim to accommodate this.

CRISIS MANAGEMENT **in the Chemical Industry**

Plans and Exercises



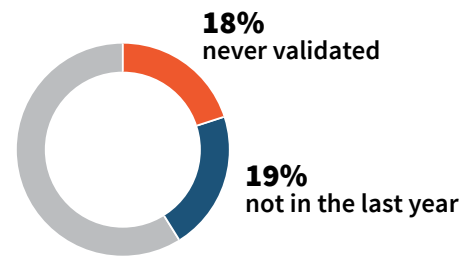
Plans and Exercises

Plans are an essential component of a crisis management program. Plans clearly set out the appropriate response and steps for when a crisis event occurs, mapping out who will do what, when, where, why, and how. They ideally include activation processes, command and control arrangements, communication protocols, and job action sheets for each key function. They should be clear, concise, and provide a handrail to support the response. Of the organizations surveyed, on average, response plans were rated 7 out of 10, a recognition that plans are typically good, but that there is room for improvement. As we have already established, in 97% of companies surveyed, the plan is produced by someone also doing another role and it is unlikely to have been produced by a specialist, someone who can provide additional insights.

Other than a lack of specialism, the two main challenges highlighted by respondents were the difficulty in making sure that plans are maintained and kept up-to-date and the need for plans to offer scalable and flexible structures for the response to a wide range of incidents.

Making sure that plans are maintained and up to date is a constant struggle across all industries, particularly where plans have grown over numerous years to a state where they may be hundreds of pages long. As soon as they are printed, they may be out-of-date, especially where they contain contact details of individuals who may leave or change job roles. Technological solutions can help here and can be explored as a way to offer real-time updates to plans, without the need to return old copies, reprint and then redistribute.

Scalable and flexible plans, that are designed to contract and expand to meet the needs of an incident, are highly important. We believe plans should be organic documents, to the extent practicable, with underpinning command and control structures that expand and contract depending on the scale and type of incident. This scalability and flexibility mean that response plans can be utilized more often and organizations will have a clear structure to deal with even minor incidents. This coordination of incidents at the lowest level is crucial in helping to prevent the escalation of incidents into emergencies and crisis situations.



The importance of testing plans and arrangements is clearly understood by the majority of organizations surveyed in the sector, with over two thirds reporting that they have exercised their arrangements in the last 12 months. The real concern highlighted by the survey is that **18% of organizations reported that they have never validated their plans while a further 19% reportedly have not validated their plans, in the last year.** Validation is vital for plans and planning arrangements to work and be fit for purpose. Testing and exercising aims to identify gaps in plans before an incident occurs, which can then be addressed and rectified.

Conducting exercises also gives individuals a chance to rehearse their roles in a safe, learning-focused environment prior to an incident. Exercises can provide those responsible during a real event the confidence and personal resilience that is so crucial to effectively address an emergency. There are a wide range of exercise types, from simple drills at a site level, to tabletop exercises where paper injects are fed to a team sitting at a table, and finally live exercises, where a full incident is simulated. Even where organizations have exercised their arrangements in the last 12 month, organizations can further maximize preparedness by conducting drills monthly, performing table exercises every quarter, overseeing simulation exercises annually, and carrying out full-scale live exercises every three years. If an incident were to occur tomorrow, over a third of organizations surveyed reportedly do not have validated fit-for-purpose plans or arrangements. As an example of an issue highlighted in a recent exercise with a customer, we identified a gap in their activation protocols. This meant that the process to escalate a major event at a site level, was not escalated up to the strategic level for over three hours, despite the incident generating significant media interest. This gap has now been addressed, but had this incident been real, it could have caused significant damage to the organization and its reputation. Exercising is a highly critical assurance process.

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Business Continuity and Continuity of Operations



Business Continuity and Continuity of Operations

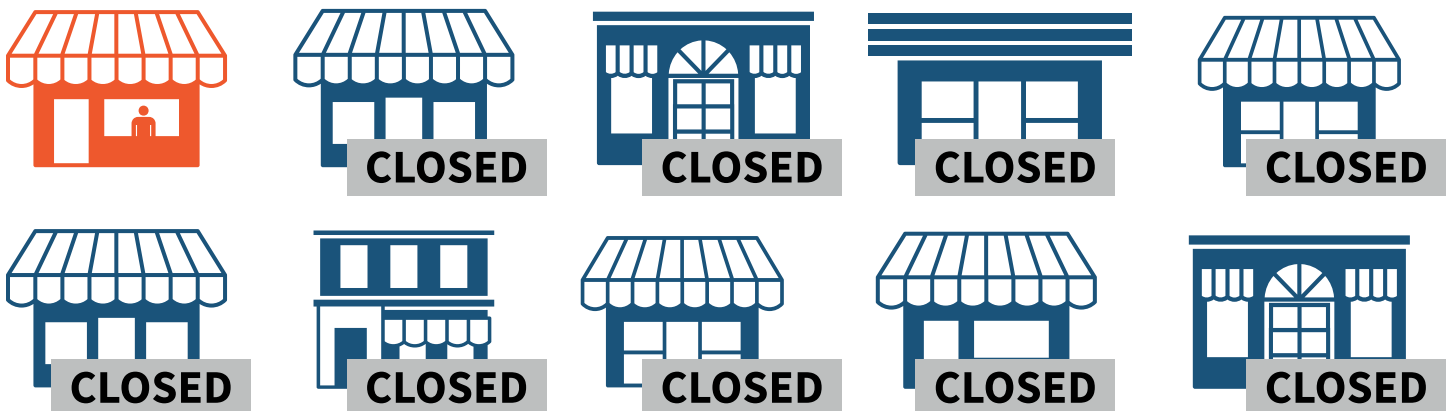
The 40% differential in shareholder value described by Aon and Pentland Analytics is not just based on an organization’s response to the crisis, but how well they recover from it. If crisis management reassures the media and wider public, then business continuity keeps your customers reassured. Having processes in place that continue your business operations, that is the delivery of service to your customers, is a key component of an organization’s resilience strategy.

If an incident occurs which forces a site or part of a site to be shut down, organizations will want to instantly consider what impact this has on their ability to meet the needs of their customers. Have they lost some raw materials? Have they lost a core part of their manufacturing capability? If so, can they divert to another plant or ask another supplier to support with this process? These are just a couple of examples of business continuity questions we may ask during a crisis situation. It is not enough to just respond to the crisis, we must also think about how we will recover from it, while continuing to meet the needs of our customers. If we don’t meet the needs of our customers, it’s likely they will go elsewhere. The Aon and Pentland Analytics study discusses the damage this may do to larger companies, but the peril is often even greater for smaller companies. Research by FEMA suggests that 40% of small businesses will not reopen following a disaster, another 25% will fail within a year of a disaster. Additionally, according to the U.S. Small Business Administration, **90% of small companies struck by a disaster fail within two years.**³

Business continuity and COOP planning plays a critical role in supporting businesses to survive a crisis. It is the pre-planning which helps to make sure that if an incident occurs, there is a plan to secure the continuity of operations and support the organization to continue to meet the needs of its customers. Despite its criticality, 20% of companies surveyed do not have business continuity plans in place, while 61% of companies surveyed do not understand how their business continuity plans and crisis management systems work together to provide a holistic response.

As soon as a crisis, incident, or emergency occurs, a business continuity team is formed to begin examining the impact of the incident on operations, and to begin planning a short, medium, and long-term recovery strategy. The business continuity team should typically be part of an organization’s activation protocols. These two systems work together, and the way they work together can be clearly articulated in the organization’s command and control structures.

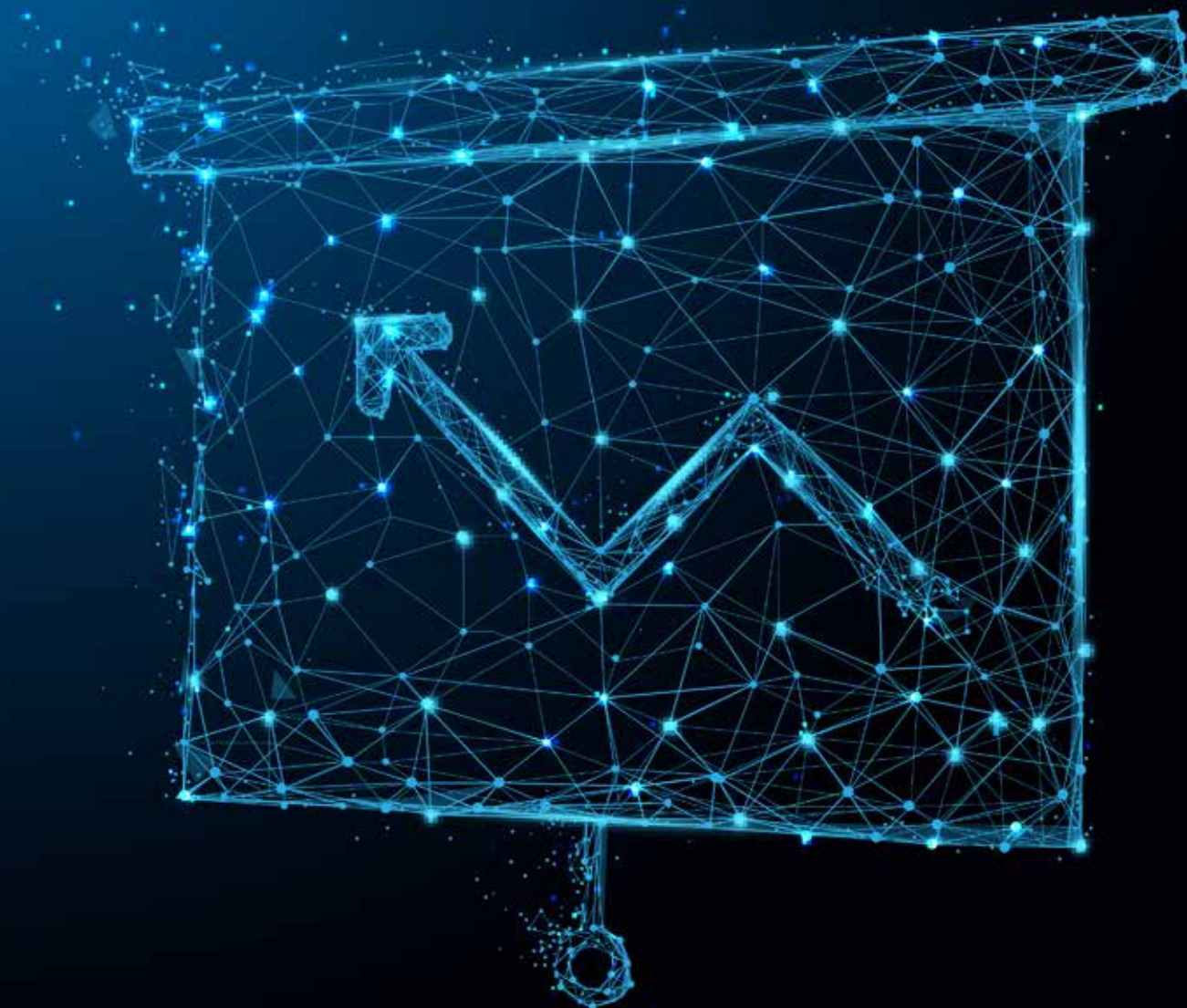
The survey results suggest that some in the industry likely have more work to do to make sure that operations continue, at appropriate levels, during a crisis. This is an essential component upon which the future of many small companies depends and where the reputation of many large companies is won or lost. Organizations benefit from having arrangements in place to continue to meet the needs of their customers when the worst happens.



³ Management Association, I., 2018. Emergency and Disaster Management. Hershey: IGI Global, p.1548.

CRISIS MANAGEMENT **in the Chemical Industry**

Improving the Industry

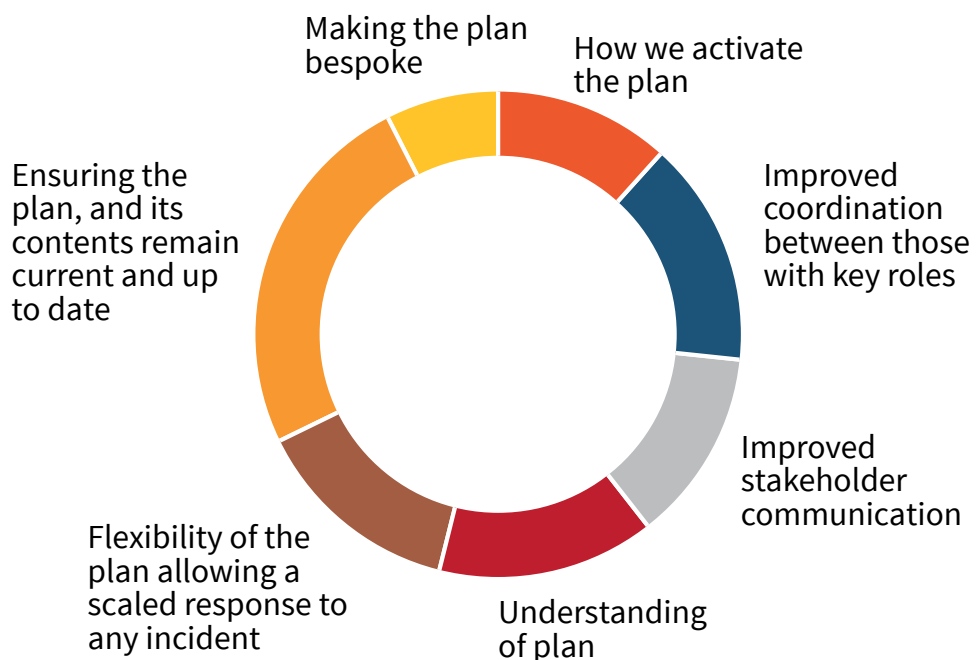


Improving the Industry

Our final question to respondents was about the support they believe they need to improve their crisis management capabilities. The interest in more support was clear, with 95% of respondents indicating so. In terms of areas for improvement, responses were evenly split across the options, indicating a desire for support across the board.

- Access to good practices:** This was requested by 26% of respondents. Organizations in the survey wanted to know the industry baseline and what “good” looks like in terms of crisis management. CHEMTREC will develop guidance to support organizations as they look to implement their crisis management program by outlining, for example, the type and frequency of training and exercising an organization may wish to consider. An appropriate type and frequency could include:
 - monthly drills
 - a tabletop exercise at least once every quarter
 - a simulation exercise every year
 - a live exercise every three years or more
- Respondents also requested **self and peer assessments of readiness**, and to support this the [CHEMTREC survey](#) tool remains live and acts as a self-assessment of readiness. CHEMTREC will also engage with trade associations to explore suitable processes for enhancements.

- Additional/more frequent training:** Given that 4 in 10 people reportedly do not understand their crisis management roles, it is unsurprising that 30% of respondents felt a need for more frequent training. [CHEMTREC’s Crisis Academy](#) offers easy to use e-learning modules which cover the core principles of crisis, incident, and emergency management. E-learning can be an excellent foundation for crisis and emergency management training, as learners can complete training in their own time and at their own pace. 28% of respondents also wanted a more general understanding of what crisis management is, reflective of the fact that very few individuals are full time crisis management professionals. We will outline the core elements of a successful crisis management program in the [webinar series](#), which supports this report and the soon to be released guidance document.
- 25% of respondents felt their organization needed to undertake **additional or more frequent exercising**. Organizations should think about how to potentially integrate exercises into their everyday business. This can minimize cost and disruption and increase attendance. For example, a short daily drill can be an excellent test of readiness. As can call out cascades, where crisis management personnel are called with, or without notice, and asked to state their

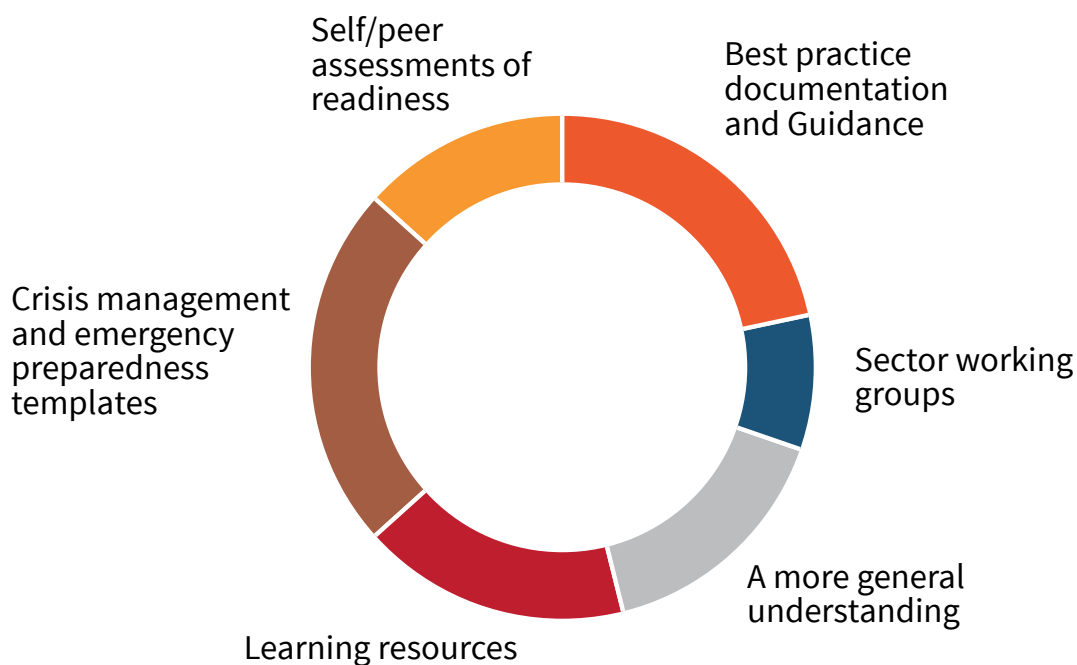


initial actions if they were responding to an incident. These simple drills allow for a regular test of readiness and support the wider exercise program, which fully tests plans and procedures. For those with mass notification services through CHEMTREC, our teams would be delighted to support you in these call out tests.

- All respondents felt there were areas to improve in their plans, something which is common across a vast array of sectors. Making sure the plan and its contents remain up to date was a particular challenge highlighted by 51% of respondents. Organizations may wish to consider the use of technology to help maintain plans, to the extent practicable. Historically, making a change to a plan has meant recalling all paper copies, reprinting, and reissuing. This can be an onerous task and means plans may be left with out-of-date content. Organizations should consider keeping plans as “live” documents, which can be updated instantly. This can be achieved using a shared or cloud-based site, or perhaps even better, bespoke apps which not only maintain plans, but also send out specific actions to individuals in the event of a response. Hard copies of plans can be kept as a backup at key sites, but organizations can significantly reduce the number of copies. 28% of organizations surveyed also struggled

with making sure that plans were flexible and allowed a scaled response to any incident. Organizations may want to consider using the National Incident Management System and the Incident Command System as a basis for plans. This structure is designed to expand and contract based on the scale of any incident. Our crisis management guidance will offer more detail on the implementation of such a system. This structure can also help with improved coordination between those with key roles, an issue highlighted by 26% of respondents. Finally, 40% of respondents wanted crisis and emergency preparedness templates. These are already available on the [CHEMTREC Crisis Academy website](#), and we will continue to work to tailor these for the chemical sector.

- **Improving activation and communication protocols:** Communication was found to be the single biggest point of failure in incidents around the world in all industries, so it is not surprising that 27% of respondents highlighted this as a key challenge. The initial activation of incidents and escalation to tactical and strategic commanders is also vitally important. The quicker activation takes place, the quicker teams can respond and the better chance they have of reducing the impacts. For quick activation, consider maintaining a single point of contact



24/7 that everyone knows to reach out to in the event of an incident. If your organization does not have a 24/7 switchboard, consider using your emergency response provider. Once the point of contact is reached, organizations can then have a call cascade mechanism or call tree in place, to speed up the wider activation of all relevant personnel. Technological solutions now allow hundreds of people to be activated at the touch of a button. One example of this is through CHEMTREC's 24/7 call center. When a company wishes to activate its plans, our teams can press a button and simultaneously call, SMS, and email all personnel required to respond. These applications can also be used for improved stakeholder communication, with key messages shared internally on an incident dashboard. It is also important that organizations consider before an incident, who their key external stakeholders are, and how they will communicate with them during an incident. Stakeholders should also be prioritized, based on their proximity and importance to the company, so that the response team has a clear idea of who to communicate with and when. For more support in developing a stakeholder matrix or implementing a manual or automatic call cascade system, speak to a member of the [CHEMTREC team](#).

CHEMTREC's Crisis Solutions team already has and will continue to develop solutions which meet the needs of the industry, while also working to support the industry. As part of this work, we would like to set up a crisis management working group to help support the chemical industry address these challenges. This is something that 15% of respondents asked for. If you are interested in being part of this group, regardless of your organization's size or your level of experience, please contact us at crisissolutions@chemtrec.com

About the Authors:

Our Crisis Solutions team has years of experience working in high-risk industries and environments with a proven track record of excellence.



Chris Scott
Crisis Solutions Manager

Chris has been working in the field of crisis and emergency response for over 30 years and is a pioneer in the field.

Chris' studies in human intelligence, linked with understanding a person's ability to manage unwanted events, has seen outstanding results. Chris has a degree in leadership and management and a master's degree in emergency planning and disaster management, carefully connecting with and complementing business continuity arrangements.

Chris has worked around the globe for some of the world's largest oil and gas companies, through to UK emergency services.



Gareth Black
Senior Crisis Consultant

Gareth is a thought leader in the field of crisis management, emergency response, and human factors.

Gareth's master's degree in homeland security and crisis management, alongside his lecturing work at Coventry University, means he is at the cutting edge of developments in the field. Gareth has a unique ability to turn his wealth of academic experience into simple, practical, and intuitive solutions for clients, making sure that they remain in the forefront of crisis management practice.

Gareth has received accolades for his work with the National Health Service, preparing for, responding to, and recovering from a wide range of incidents whilst also working on policy and procedural developments of national and international significance. More recently Gareth has worked with clients in the chemical, oil and gas, university, and public industry, creating inventive and intuitive solutions to maintain their crisis readiness.