

INCIDENT RESPONSE (WHY PLANNING IS IMPORTANT)

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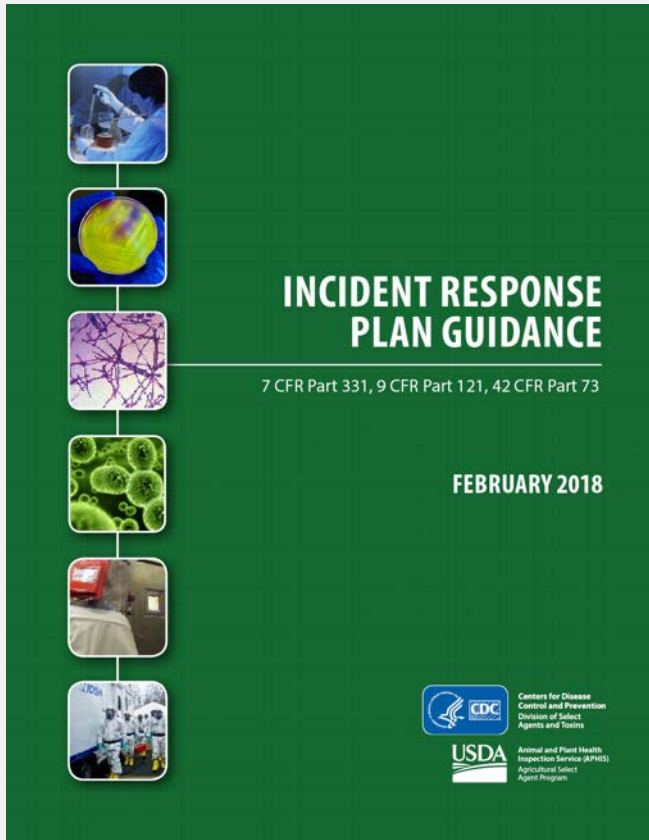


“IT ISN’T A QUESTION OF IF YOU WILL EXPERIENCE AN INCIDENT. IT’S A MATTER OF WHEN IT WILL HAPPEN”*

- Protect people.
- Protect research animals and plants.
- Maintain control of pathogens and toxins.
- Protect equipment, facilities, and the environment.
- Avoid escalation of the problem.
- Prevent the need for heroic actions.
- Build resilience: minimize damage and restore operations.

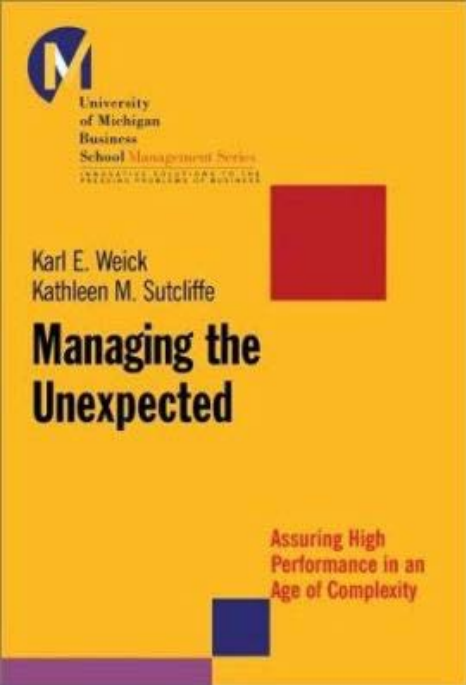
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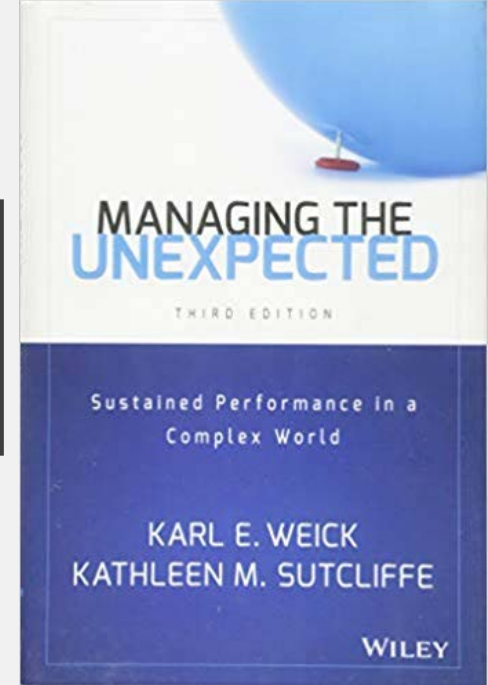


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- Section 14 of the select agent regulations states that every registered entity must develop and implement a written incident response plan.
- It will help your organization become a high reliability organization.

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HIGH RELIABILITY ORGANIZATIONS



- A High Reliability Organization (HRO) is one that has been successful in avoiding disasters despite being in a high risk field where accidents can be expected due to complexity.
- Specific examples that have been studied, most famously by researchers Karl Weick and Kathleen Sutcliffe, include nuclear power plants, air traffic control systems and naval aircraft carriers. Recently healthcare organizations have moved to adopt the HRO mindset as well.
- <https://blog.kainexus.com/improvement-disciplines/hro/5-principles>

5 TRAITS OF HIGH RELIABILITY ORGANIZATIONS

1. Preoccupation with Failure
2. Reluctance to Simplify
3. Sensitivity to Operations
4. Commitment to Resilience
5. Deference to Expertise



PREOCCUPATION WITH FAILURE

- HROs do not ignore any failure, no matter how small, because any deviation from the expected result can snowball into tragedy. It is necessary, therefore for HROs to address any level of technical, human or process failure immediately and completely. **It's also important to be somewhat fixated on how things could fail, even if they have not.** (<https://blog.kainexus.com/improvement-disciplines/hro/5-principles>)
- Reasons for failure: (*Managing The Unexpected* by Weick and Sutcliffe)
 - Someone somewhere didn't anticipate what and how things could go wrong;.....Risk Assessing
 - Some deviation was not caught as soon as it could have been caught.....Quality Assurance Program
 - People didn't dig into unexpected events to understand their unit or system better.....Root Cause Analyses
- Risk-assessing operations is one of the best tools available to anticipate failure and implement control measure to minimize potential and/or severity of an undesirable outcome.
- **Incident response planning prepares you to handle adverse situations, when they occur.**

RELUCTANCE TO SIMPLIFY

- High Reliability Organizations are complex by definition and they accept and embrace that complexity. HROs do not explain away problems, instead they conduct root cause analysis and reject simple diagnoses. (<https://blog.kainexus.com/improvement-disciplines/hro/5-principles>)
 - **They also plan for the possible, not just the probable.**
- It calls on people to draw on what they know to assess and address novel situations.
- Understand the degree of complexity of critical operations.
- It is important to have the right mix of people and specialties assessing operations.
- When conducting root cause analyses: any systematic approach that continues to ask “why”, identifies all contributing factors, and provides actionable information to resolve and prevent is value added.
- When conducting a vulnerability assessment, or site-specific risk assessment, and incident response plan: **any systematic approach that continues to ask “what could go wrong during this operation” is value added.**

SENSITIVITY TO OPERATIONS

- People realize how a situation could impact the environment around them and leaders understand that people on the front line of a situation have the best picture.
- “Be where you are with all your mind.” (*Managing The Unexpected* by Weick and Sutcliffe)
- Avoid ignorance. Know the hazards of the workplace and understand the magnitude of the situation.
 - A trap for the beginner.
- Avoid casualness. Take all adverse incidents seriously and do not underestimate the potential magnitude.
 - A trap for the experienced.
- Avoid distractions. Don't let external pressures cause short cuts in planning or response.
 - Time and work-related pressures are two examples.
- **Maintain Situational Awareness.**
- **Understand how a situation may affect unrelated operations.**

COMMITMENT TO RESILIENCE

- Resilience in HROs means the ability to anticipate trouble spots and improvise when the unexpected occurs. The organization must be able to identify errors for correction while at the same time innovating solutions within a dynamic environment. (<https://blog.kainexus.com/improvement-disciplines/hro/5-principles>)
- **The signature of a high reliability organization is not that it is error-free, but that errors don't disable it.** (*Managing The Unexpected* by Weick and Sutcliffe)
- Even as we endeavor to anticipate and minimize adverse events, we must be capable of dealing with the unexpected.
 - **Resilience is a combination of keeping errors small, improvising workarounds that keep the system functioning, and absorbing change while persisting...stretch without breaking and recover.**

DEFERENCE TO EXPERTISE

- **Expertise, rather than authority, takes precedence in an HRO. When conditions are high-risk and circumstances change rapidly, on-the-ground subject matter experts are essential for urgent situational assessment and response.** (<https://blog.kainexus.com/improvement-disciplines/hro/5-principles>)
- Expertise can be ignored by organizational relationships, dismissed because of its presumed logic, conditioned by rank, minimized because of self-interest, or rendered secondary by prevailing routines.
- Systems should organize so that problems attract and create their own hierarchies.
- **Need to loosen rigid hierarchies, know where experts are within the organization, and have mechanisms to get to them when needed.**
- Deference to experts should not mean submission. Chain of command should stay in place, but not get in the way of input from the experts.
- **Leaders should approach crisis situations in sense making mode, rather than decision making mode; this fosters subordinates owning what they see and opens channels of communication.**

KEYS TO SUCCESS

- Understanding the potential challenges of your work environment.
- Leveraging human and social capital of the organization.
- Exploiting tacit and explicit knowledge in the organization.
- Creating a simple, short, specific, and flexible...actionable...plan!
- Think...don't become robotic because you have a plan.
- Ensuring roles and responsibilities are understood.
 - Adequate redundancy; don't be one deep for any critical role.
- Organizing for effective execution of the plan.
- Communicating effectively.
- Managing the problem "and" the second and third order effects.
- Enhancing readiness through exercises that challenge the plan.
- Learning and improving from every incident.

VUCA ENVIRONMENT



- **V**olatility: the challenge is unexpected or unstable and may be of unknown duration, but it's not necessarily hard to understand; knowledge is often available.
- **U**ncertainty: the event's basic cause and effect are unknown. Change is possible but not a given.
- **C**omplexity: the situation has interconnected parts and variables. Some information is available or can be predicted, but the volume or nature of it can be overwhelming to process.
- **A**mbiguity: causal relationships are completely unclear. No precedents exist; you face "unknown unknowns."
- From Harvard Business Review, January-February 2014; *What VUCA Really Means for You* by Nathan Bennett and B. James Lemoine.

“Human capital in their unit and their own social capital are two of the most important resources available to strategic leaders as they fulfill their responsibilities.”

The essence of strategic leadership: Managing human and social capital

Michael A Hitt; R Duane Ireland

Journal of Leadership & Organizational Studies; Summer 2002; 9, 1; ABI/INFORM Global pg. 3

HUMAN CAPITAL

- In knowledge-based economies; human capital is likely the most important resource.
- Human capital represents the knowledge, skills, and capabilities of individuals.
- Human capital is reflected by education, experience, and special skills.
- Organizations with greater investment in and utilization of human capital experience higher levels of performance.
- Tacit Knowledge
 - Human capital is the primary source in an organization.
 - Unique and difficult to imitate.
 - Can and should be developed.

DIFFERENCES BETWEEN EXPLICIT AND TACIT KNOWLEDGE IN THE WORKPLACE

Explicit and Tacit Knowledge in the Workplace

<p>Explicit Knowledge – academic knowledge or “know-what” that is described in formal language, print or electronic media, often based on established work processes, use people-to-documents approach</p>	<p>Tacit Knowledge – practical, action-oriented knowledge of “know-how” based on practice, acquired by personal experience, seldom expressed openly, often resembles intuition</p>
<p>Work process – organized tasks, routine, orchestrated, assumes a predictable environment, linear, reuse codified knowledge, create knowledge objects</p>	<p>Work practice – spontaneous, improvised, web-like, responds to a changing, unpredictable environment, channels individual expertise, creates knowledge</p>
<p>Learn – on the job, trial-&-error, self-directed in areas of greatest expertise, meet work goals and objectives set by organization</p>	<p>Learn – supervisor or team leader facilitates and reinforces openness and trust to increase sharing of knowledge and business judgment</p>
<p>Teach – trainer designed using syllabus, uses formats selected by organization, based on goals and needs of the organization, may be outsourced</p>	<p>Teach – one-on-one, mentor, internships, coach, on-the-job training, apprenticeships, competency based, brainstorm, people to people</p>
<p>Share knowledge – extract knowledge from person, code, store and reuse as needed for customers, e-mail, electronic discussions, forums</p>	<p>Share knowledge – altruistic sharing, networking, face-to-face contact, videoconferencing, chatting, storytelling, personalize knowledge</p>

SOPs
 Doctrine
 Policies
 Manuals
 Training
 Materials

Incident Response
 Planning
 Incident Response

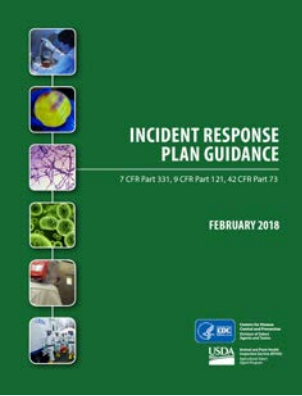
HUMAN CAPITAL IN BIORISK MANAGEMENT AND INCIDENT RESPONSE

- With biomedical research being a knowledge-based system; its human capital is likely its most important resource.
 - Agent specific SMEs
 - Biosafety, Public Health, and Biosecurity Professionals
 - Facility Engineers
 - Emergency Response and Public Affairs Personnel

SOCIAL CAPITAL

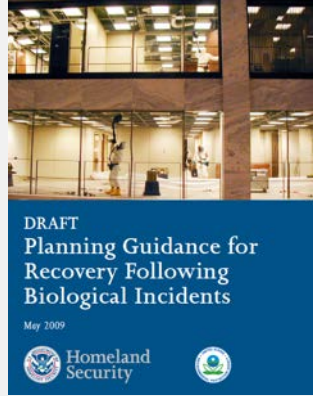


- The relationships between individuals and organizations that facilitate and create value.
- Internal social capital is the relationships between leaders and the people they lead as well as relationships across the organization's work units. Effective leadership of social capital leads to collaborations.
 - Insightful leaders build great teams with diverse and rich talent that can be called upon to solve problems and help develop a vision for the future.
 - A culture of trust is essential to maximizing social capital.
- External social capital is the relationships between leaders and those outside the organization that they interact with to facilitate the organization's interests.
 - This could involve formal and informal alliances.
 - Opportunities should be sought to integrate external social capital with the organization's internal social capital.
 - Developing external social capital starts with identifying partners or stakeholders.
 - Mutually beneficial relationships must be built.
 - Success will be based on trust and sensitivity to the other entity's interests.

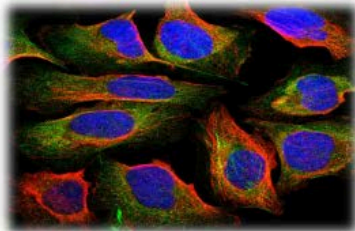


DEVELOPING AN ACTIONABLE INCIDENT RESPONSE PLAN

- Keep it simple, short, specific, and flexible...Actionable!
 - Base plan.
 - Situation vs. event specific annexes.
 - File annexes independently in the Emergency Operations Center
- Have the right people conducting the vulnerability assessment (site-specific risk assessment) and planning to leverage human capital and tacit knowledge.
- Synchronize with other doctrinal elements and SOPs in the organization.
- Identify social capital requirements, develop it, coordinate actions, and formalize.
 - Get to know them and allow them to get to know you.
- Provide ample time to develop a well thought, comprehensive but flexible, and actionable plan.
- Circulate it with all people who have roles and responsibilities and make sure they understand their roles and responsibilities.



BASE PLAN



Biological Incident Annex to the Response and Recovery Federal Interagency Operational Plans

Final – January 2017



Homeland
Security

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EXECUTING THE PLAN



- ICP/FICP/EOC
 - Organize effectively: people, room, and equipment.
 - Manage the emergent situation to save lives, protect unaffected personnel and critical resources, maintain control of BSAT, minimize magnitude of effects, coordinate support activities, develop resiliency strategy to maintain critical operations, and restore normal operations as soon as possible.
- Assemble resources rapidly and effectively.
- Attain rapid situational awareness.
- Identify all hazardous situations that need to be addressed and prioritize effort.
- Pull situation specific annexes that pertain to the scope of the incident.
- Determine what situations need to be addressed that have no annex to guide the effort.
- Assess second and third order effects and develop mitigation strategy.
- Communicate, communicate, communicate!
- Be prepared to handoff incident command and assume support role, as conditions warrant.

AFTER ACTION REVIEW



No Furry Cat Rockets

- Analyze incident response and effectiveness of incident response plan, and conduct a root cause analysis for the cause of the incident.
 - My recommendation is to do them separately.
- Systematic approach.
 - Variety of acceptable approaches.
 - 2-step process is recommended.
 - First is a hot-wash of what worked well and what did not while emotions are still a factor.
 - Second is a more detailed thoughtful assessment of the response effort that determines why some things did not work well and what needs to be done to improve response.
- My recommendation: Doctrine, Organization, Training and education, Materiel, Leadership, Personnel, and Facilities (DOTMLPF)