Complacency: A Universal Hazard (2022)

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OBJECTIVES

At the completion of this activity, the participant will be able to:

- Quantify a risk
- Identify the biologic cause of complacency
- Describe a strategy to combat complacency

INTRODUCTION

I recently returned from a professional society meeting; and brought home COVID – as did many of those in attendance, including six of my personal friends. I was fully vaccinated, had all the available boosters, and was asymptomatic before I went there. In fact, I flew in one afternoon and out early the next morning, only spending a few hours at the meeting. After more than two years of the pandemic, most of us are frustrated by its impact on our lives and eager for things to be normal. At the time of my meeting, most places in the United States had no mask mandates or social distancing requirements. Most Americans were going to restaurants and other public places without masks. My recent experience contracting COVID made me think about the nature of risk, my choices, and complacency.

Hazards surround us in almost every endeavor. Whether crossing a street, driving a car, flying an airplane, or receiving a hyperbaric treatment, we must be mindful of the hazards around us. In hyperbaric medicine, there are a variety of hazards to our patients and us. The risk of a mishap from exposure to a particular hazard varies. Our perception of risk is subjective, making it difficult to prioritize different risks. However, it is possible to quantify risk (i.e., give it a numerical score). *The Risk Assessment Guide for Installation and Operation of Clinical Hyperbaric Facilities* contains an entire section on Determining Risk Levels (Burman, 2019). I have paraphrased it below.

DETERMINING RISK LEVELS

A risk may be quantified by the product of three scores: the *probability* (quantified by the likelihood of occurrence), the *exposure* (quantified by frequency of exposure to the hazard), and the *severity* (quantified by the severity of negative consequences). The numerical score of each of the three elements is subjective but should be based on a realistic worst-case scenario. The Likert scale provides a suitable means of allocating scores to each element. The overall risk score is the product of your subjective scoring of the three elements (e.g., 5 x 5 x 5 = 125, the highest possible score). The table below provides descriptions for the quantification of probability, frequency, and severity.

Probability of a mishap		Frequency of exposure		Severity of the outcome	
Certain	5	Continuous	5	Catastrophic (death, destruction)	5
Highly Likely	4	Daily	4	Severe (severe injury, downtime)	4
Likely	3	Weekly	3	Serious (injury, facility capacity reduced)	3
Unlikely	2	Monthly	2	Significant (minor injury/damage)	2
Highly Unlikely	1	Annually	1	Insignificant (inconvenience, extra work)	1

It is possible to interpolate between scores. For example, if the frequency of exposure is 2-3 times per week, use a frequency score of 3.5. It is also possible to have no exposure to a hazard (frequency of zero) or no consequence (severity of zero). If so, the overall risk score is zero.

The next table provides empirically derived guidance for different levels of risk. Each level of risk (based on the overall risk score) has a recommended action based on urgency to avoid consequences.

Score	Risk Rating	Action
> 99	Very high	Attention and risk mitigation are critical and must be given highest priority. A dangerous situation exists, with the possibility of catastrophic consequences. The activity should stop immediately and not proceed until effective risk mitigation is in place.
60 - 99	High	Attention and risk mitigation are required and must be given high priority. A serious situation exists that could disrupt the facility or endanger people or equipment. An urgent plan of action to mitigate the risk is necessary.
20 - 59	Medium	Attention and risk mitigation are required. Exposure to this risk could eventually result in a mishap. Outcomes may include: injuries, equipment damage, business disruption, liability, or financial consequences. Risk mitigation is necessary, but can be accomplished within practical time and cost considerations.
10 - 19	Low	Attention and risk mitigation are recommended. Risk mitigation is recommended for the optimal functioning of the hyperbaric facility.
< 10	Very low	Attention is recommended but the risk is acceptable. Note should be taken of the risk and potential consequences, but either it has already been suitably mitigated or the impact is of little significance.

WAS MY PROFESSIONAL SOCIETY MEETING TOO RISKY?

I have retrospectively scored the risk of attending this meeting. This scoring involved lots of information, including:

- CDC guidelines on traveling and indoor gatherings
- The low community level of COVID at my destination
- The high prevalence of vaccinated individuals and my fully vaccinated status
- The low incidence of hospitalizations and deaths from the current Omicron variant
- My plan to limit my exposure to only a few hours

When I consider the probability, frequency, and severity of contracting COVID from this meeting, I come up with a Low risk score (10-19). Before the meeting, I intended to wear a mask on the airplane, but I did not intend to wear one at the meeting. What I did not know is I would be among 300 people in a crowded and poorly

ventilated banquet hall. I was not wearing a mask. In fact, very few people were. With this additional information, I might re-score it to a Medium risk (because the probability was higher).

To be honest, I did not do this risk assessment before deciding to attend. In fact, almost none of the information above crossed my mind. I developed a habit of going to the office with co-workers, dining in restaurants, and shopping in stores without any special precautions. With over a year of this experience, I had not contracted COVID. Without giving it any real consideration, I chose to attend the meeting. If I had done the risk assessment, would it have changed my behavior? Maybe not. However, I now realize by failing to truly consider the risk I was being complacent.

WHAT IS COMPLACENCY?

It's complicated. Some would say complacency is laziness, but that is not accurate. It is also not accurate to call it inattention (but inattention might be a symptom of complacency). I have not found a synonym that captures the essence of this complex concept, but there are several different definitions. One definition is, "a feeling of being satisfied with how things are and not wanting to try to make them better" (The Britannica Dictionary, n.d.). For example, a frequent question in our introductory hyperbaric medicine course is, "Do I have to attend the monoplace chamber exercise? I operate a monoplace chamber all the time." The people who ask this are exhibiting a complacent attitude. Another definition of complacency is, "self-satisfaction, especially when accompanied by unawareness of actual dangers or deficiencies" (Merriam-Webster, n.d.). For example, a hyperbaric colleague once confessed, "I used to think emergency drills would be a waste of time, until I started doing them." Running emergency drills can reveal deficiencies in our plans, skills, and equipment (and give us an opportunity to remedy them). This individual's work ethic was obvious and he would never have been labeled as lazy. However, he had a complacent attitude about emergency drills, until the drills revealed deficiencies.

The Indeed.com website describes complacency as, "when you become so secure in your work that you take potentially dangerous shortcuts in your tasks, don't perform to the same quality as you once did or become unaware of deficiencies. Complacency can be a more major issue in industries like construction and healthcare, where it's important to remain vigilant and very aware of workplace hazards or need to care for someone else's medical condition to the best of your ability" (Indeed.com, 2021).

Based on the above definitions, complacency is a state of mind that can lead to lax behavior. Lax behavior increases the probability of a mishap.

Complacency is not an easily observable condition, and objective criteria (e.g., affect, behavior) can be difficult to identify. Lipinski (2021) interviewed several experienced safety professionals from various industries and published a list of anecdotal clues these professionals use to gauge the presence of complacency. The list includes:

- Eyes not on the task
- Multitasking (e.g., having conversations while working)
- Not following procedures
- Not completing checklists or 'pencil whipping' them

From my experience, I know failing to follow procedures and 'pencil whipping' checklists are common survey findings in hyperbaric medicine. From our consulting work, the staff of International ATMO have witnessed numerous clues to the presence of complacency in our colleagues, including the following:

- Failing to open the main water line valve on the multiplace chamber fire suppression system during the facility start up
- Failing to verify there is enough pressure in the monoplace chamber air break cylinder during the facility start up
- Failing to connect the patient ground wire to the monoplace chamber prior to pressurization
- Failing to recognize an actionable problem with patient vital signs

Regarding a group of mountain climbers attempting to reach the peak of Mount Everest in 1996, Dr. Kenneth Kamler wrote, "There wasn't much discussion of danger anymore. … Though the risks of Everest hadn't lessened, our perception of them had. … Familiarity, and prolonged exposure without incident, leads to a loss of appreciation of risk. … And so it was that with each successive safe return from Everest, our sense of danger receded" (Kamler, 2000). It is Dr. Kamler's contention that complacency was a major factor in the death of nine climbers in 1996.

Repeated exposure to a hazard, without a mishap or negative consequence, builds confidence. If our personal experience contains no mishaps or near misses, it becomes easier to ignore a hazard (because it has not bitten us yet). I have heard my colleague Tom Workman say, "our impressive safety record works against us." Because we do not have frequent mishaps, regulatory agencies don't give us much attention or specific guidance. The fact that hyperbaric mishaps are relatively rare also affects us on a personal level. The greater the success, the greater the risk of a complacent mindset. According to Herstein (2021), "When you've been consistently winning and achieving, overconfidence and faulty logic can blind you to potential dangers up ahead. Complacency costs money, causes slip ups, and creates critical mistakes that will put … your people at risk."

There is another problem with routine tasks – they become habits. From Lipinski (2021),

> "…[C]ertain concepts of brain design and function are established science and help explain how the brain responds to repeated tasks. … A habit is a physiological phenomenon that takes place inside the brain. Advanced neuroimaging and scientific experiments have revealed that a habit is a neural pathway created through repetition and involves the collaboration between two parts of the brain: the prefrontal cortex (PFC) and the striatum.

> The PFC is the part of the brain that sits above the eyes and is involved in many of our executive functions. It is essential in making decisions, planning, focusing thoughts, paying attention, learning and considering several different yet related lines of thinking. It is used for evaluating the future consequences of current activities, working toward a defined goal, predicting outcomes, interpreting social cues, moderating social behavior, and determining good and bad, better and best. The PFC helps retain information while performing a task, determines what information is relevant to the task in progress and keeps the objective of the task in mind. … Employees would be eminently safer and more productive if they were using their PFC all the time.
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> The striatum is found in the center interior of the brain at the top of the brain stem. It is the habit, reward and goal-motivated behavior center of the brain. …
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> When someone performs a behavior or action for the first time, the PFC fires and communicates in a loop with the striatum. When the brain is doing something new, a lot of work is expended, and all the neurons along this path between the PFC and the striatum fire. The brain is a quick learner; the next

> time it repeats the same action, it is a little more familiar, so fewer neurons fire. As this process is repeated, the action gets progressively easier, and fewer and fewer neurons fire. When something has become a habit, only the neurons at the beginning and end of the action must fire. The bulk of the action can be on autopilot, freeing up mental activity.
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> … [U]nderstanding two key points from the neurobiological studies and academic literature will enable safety professionals to manage risk in the workplace: 1. once habits are created, the sequencing 'moves' to a different part of the brain; and 2. when a behavior or action has been repeated often enough to become a habit, the PFC no longer needs to be involved to successfully complete it.
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> … [Habits] result in people being less aware of what is going on around them. … Complacency is a state of decreased external awareness and reduced sensitivity to hazards caused by the brain's ability to activate neural pathways that require less PFC activity."

Much of the daily work we do in hyperbaric medicine is repetitive (not to mention monotonous and uneventful). This is certainly the case with checklists. Many people perform a checklist from memory without properly using the visual reminder. Others simply go through the motions of filling out the checklist (the documentation exercise) without paying attention to what they are doing (Sheffield & Posey, 2022). In other words, they are running on autopilot and not engaging the PFC.

Our patients can also be complacent with our checklists. There have been many incidents of patients accidentally taking various prohibited items (including phones and lighters) into the hyperbaric chamber in spite of being specifically asked about these items prior to the treatment. After multiple days of hearing the same checklist items read to them, some patients tune us out and only hear, "blah, blah, blah." Then they respond, "no, no, no" out of habit, instead of thinking about the questions asked. I am a frequent air traveler; and I catch myself tuning out the flight attendant when the pre-flight briefing starts. Maintaining diligence, especially with repetitive tasks, is a significant challenge. Running on autopilot increases the probability of a mishap.

HOW TO COMBAT COMPLACENCY

Like most complex issues, there is no magic potion to cure complacency. There are many suggestions out there. From Lipinski (2022), "[The] solution to complacency [is] clear: to move the brain activity and re-engage the PFC. While we've identified several different practices that can accomplish this task, one of our favorites is asking good questions. A good question can only be answered by the PFC." A specific way one could apply this suggestion is to add the question "Are there any concerns?" at the end of our pre-treatment medical checklist and our pre-treatment safety checklist (Sheffield & Posey, 2022). The question is meant for you, not the patient. The question could be modified, but the intent is to disengage the autopilot and engage the PFC by forcing us to consider the question. We can also try to engage the patient's PFC. Instead of asking, "Do you have a phone with you?" we could ask, "Where is your phone right now?" Instead of asking, "Do you have a lighter?" we could ask, "Have you ever smoked?" and follow with, "Where is your lighter right now?"

Other suggestions from Lipinski (2021) include the following:

- "The more experienced an employee is with a specific activity, the more easily that person's brain relies on neural wiring shortcuts that do not require engaging the PFC, leaving them less aware of potential hazards.

> In other words, the most experienced and most valuable employees are at the greatest risk of complacency. … Fresh eyes can notice potential hazards that more experienced employees have become accustomed to and have learned to work around."

- "[T]oo much repetition can lead to zoning out. One way to limit the risk of complacency is to ensure that the more repetitive the task, the shorter the amount of time an employee should be dedicated to that task before changing activities. … More variety will benefit cognitive engagement."
- "[T]he human brain has limited processing power. … [E]valuate the steps, forms and checklists that employees are required to complete. Consider reducing or avoiding unnecessary cognitive toll by streamlining forms and eliminating unnecessary steps."
- "Interventions to prevent complacency must address the root cause and stimulate brain activity. External cues should be built in, to alert employees when something is outside the norm or to remind employees that their full executive functions should be involved in a task. … [I]dentify cases where employees are conducting repetitive tasks and provide a visual cue or a systemic pause to allow employees the opportunity to notice and correct an error.
- "A second place to reengage is before executing an unrecoverable step: something that cannot be undone once it is done. Safety professionals should identify these unrecoverable tasks or actions but also implement systemic pauses that will fully engage the employee's executive functions before proceeding with the next step."

The last two suggestions from Lipinski are consistent with the concept of a pause point in checklist utilization (Sheffield & Posey, 2022). We should evaluate our checklists, paying special attention to where the pause points should be and how we might alter the checklist to engage the PFC.

From Indeed.com (2021), one of the many tips for changing complacent behavior reads, "Regular risk assessments can help keep your staff members aware of the dangers of the workplace and serve as a reminder to pay close attention to how they perform their work." A similar concept is at the heart of the Safety Training Observation Program (STOP). STOP trains supervisors to constantly look for safe and unsafe acts and conditions. In addition to observation, unsafe conditions should be immediately corrected; unsafe acts should be interrupted, and the individual(s) involved educated about the risk(s). Safe acts should be reinforced (e.g., complimented or rewarded). This type of program should make people more aware.

A suggestion from multiple other sources is to perform a self-assessment. Try to identify activities you perform out of habit, rather than deliberately (i.e., identify your own complacent behaviors). The act of recognizing habitual behaviors might engage the PFC.

Combating complacency should not be the sole responsibility of the individual or the supervisor. A sustainable effort needs to come from the leadership of the organization. A New York Times article in 2008 compared the #1 and #2 car manufacturers, GM and Toyota. At the time, Toyota sales were already higher than GM in most markets and were on track to soon take over the #1 spot. The CEO of both companies were interviewed.

> "Rick Wagoner, the chief executive of General Motors, boasts about the number of markets where the U.S. automaker is No. 1. Toyota Motor's president, Katsuaki Watanabe, emphasizes where his company trails.
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> … Conveying to the rank and file the dangers of complacency is a tall order. That is why, from the moment he took the helm in 2005, Watanabe has made it his mission to discourage employees from measuring Toyota against rivals but rather against a lofty goal: developing a dream car that cleans the air, doesn't cause accidents, makes drivers healthier and can go around the world on one tank of fuel. 'We have a long way to go,' Watanabe says."

This type of directive from the top of the organization encourages innovation and improvement – activities that engage the PFC.

Developing a culture of performance improvement in our hyperbaric departments would incorporate all the ideas above. Everyone on the team should look for a way to do better (e.g., better communication, better service, better outcomes, more efficient, safer practice). If so, we would be more aware of the safety issues around us, more aware of our own behavior, and engage the PFC more often.

One strategy toward this goal is to have a daily improvement huddle. Many hospitals have adopted a daily stand-up meeting. The managers of every department get together every day for a meeting with the leadership of the hospital. It is called a stand-up meeting, because no one sits down – the meeting is meant to take only a few minutes. Each manager is expected to report "safe/unsafe" or "okay/not okay". If anyone reports "unsafe" or "not okay", they state the nature of the problem, and they are instructed to meet with the appropriate hospital colleague immediately after the stand-up meeting (to help them resolve the issue). Whether or not the issue is resolved will be addressed at the next stand-up meeting.

The same type of process could be adopted within our department. Some facilities already have a daily huddle to discuss patients, but the proposed huddle has a different focus. Perhaps a morning huddle to discuss patients and a separate afternoon huddle (at the end of the workday) to discuss any improvement opportunities we noticed today. The entire team (i.e., physicians, nurses, chamber operators, admin staff) would meet for just a few minutes to identify any areas for improvement. If this process is given priority by the leadership of our department and all staff are expected to participate, they might pay more attention to the workplace, processes, and their own actions (i.e., engage the PFC).

CONCLUSION

Risks are everywhere. Quantifying them helps us focus and take appropriate mitigating measures. Time and familiarity diminish our perception of the seriousness of risk, even though the risk level does not change. In fact, failing to appreciate the risk can increase the risk level by increasing the probability of a mishap. Proficiency (i.e., developing good habits) can help mitigate risk; but proficiency also allows complacency to creep in. There is not a simple solution to complacency. Engaging the PFC should be part of the strategy and multiple measures may be necessary.

The way our brains function during repetitive tasks and the fact that our PFCs are typically not engaged during this time is a revelation to me. It validates some of my choices; and makes obvious how some other choices were counterproductive. It has me rethinking procedures for chamber operators, design of checklists, and how we teach our safety courses. For me, this one bit of information will have a significant impact going forward.

KEY POINTS FROM THIS ARTICLE

- A risk can be quantified (i.e., given a numerical score).
- Complacency is not laziness or lack of attention. It is a state of mind, potentially leading to lax behavior. Lax behavior increases the probability of a mishap.
- Complacency is a natural byproduct of developing habits (even good habits). When a task becomes routine, we are less aware of what is happening around us - the prefrontal cortex is less involved.
- Performing a risk assessment or engaging in performance improvement should make us more aware of safety issues around us.
- Engaging the PFC should counteract complacency.
- The PFC can be engaged by asking a good question.

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