

Perfect Practice Makes Perfect

Accurate Behavioral Assumptions are an Essential Element of Exercises

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In law enforcement training circles there are legendary stories from the old days, where officers were killed during a gun fight and empty shell casings were found in their clenched hands or pants pockets. Pausing to catch their brass as they were trained when reloading a revolver, more a matter of range etiquette than for any tactical reason, is thought to have contributed to officer deaths. Under stress, we perform as we have practiced. For practice to be useful, we must be certain to rehearse the response to a threat or hazard accurately. The bottom line is that, “Practice doesn’t make perfect. Perfect practice makes perfect.” Flaws in any aspect of drills or exercise repeated often enough are likely to surface in a real-time response and perhaps with dire consequences.

The Need For Accurate Behavioral Assumptions

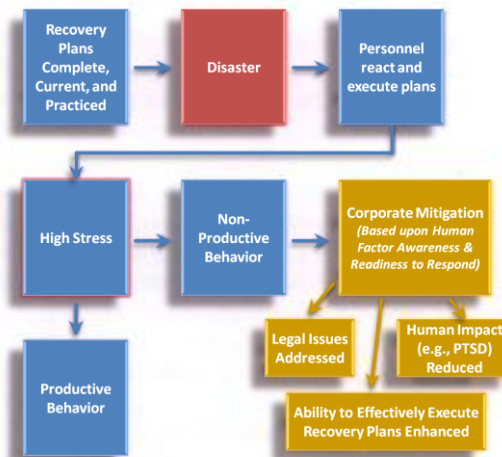
One of the most difficult areas to effectively model in exercise planning is predicting and preparing for the actual human behavior associated with a particular exercise scenario. Exercising around flawed behavioral assumptions can compromise the effectiveness of response and recovery plans and lead to potentially deadly results. Recent research, including the “Redefining Readiness Study” (New York Academy of Medicine, 2004), expose critical flaws in emergency preparedness. A summary statement from the study says it best: “Research shows that even if the nation gets all of [the logistics] right, the plans that are being developed now are destined to fail because they are missing an important piece of the puzzle: how the American public would react to these kinds of emergency situations.”

For plans to be effective they must be based on accurate behavioral assumptions, that is, what people are most likely to do in an actual emergency, whether they are executives, front line employees, or the general public. David McEntire, in the popular “Wiley Pathway Disaster Response and Recover” textbooks, has cautioned would-be emergency managers that, “In order to react successfully to a disaster, you must understand human behavior better than anyone else in your community.” Understanding and anticipating human behavior across a variety of hazard scenarios and around the entire cycle of emergency planning is critical to developing sound policies, plans, and protocols. These same

accurate behavioral assumptions must also be present in exercises to make them as realistic and useful as possible.

The importance of infusing emergency plans with behavioral accuracy is reinforced by the recent establishment of a human factors/behavioral sciences branch within the U.S. Department of Homeland Security’s science and technology directorate. Among the various “thrust areas” for this new branch is exploring “societal resilience” and the behavioral aspects of disaster response and recovery. It is important that human factors incorporated into emergency planning be scientifically sound. Most research in this area is considered “evidence-informed” rather than “evidence-based.”

Evidence-based behavioral research is derived from highly structured and controlled experiments. There are several obstacles, ethical and otherwise, to experimenting with human subjects in high-stress or traumatic situations. Most disaster-related behavioral research is considered “evidence-informed” and rests upon a combination of field observations, case studies, literature reviews, expert consensus, and the real life experiences of those involved in disaster response and recovery.



Ascertaining Behavioral Response

Another example of recent efforts to use a behavioral sciences approach to reinforcing traditional planning methods is the PLAN C project at New York University’s Center for Catastrophe Preparedness and Response and the NYU Bioinformatics Group. PLAN C (Planning with Large Agent-Networks against Catastrophes) represents the cutting-edge of planning using a novel simulation computational tool to help emergency managers, planners, and public health officials to prepare and evaluate plans designed to respond to catastrophic situations in urban environments.

The sophisticated algorithms have been able to simulate the complex dynamics of emergency responses in different urban catastrophic scenarios (chemical agent, bomb explosion, small pox, etc.). One planning scenario examined a hypothetical sarin nerve gas attack in Manhattan, similar to the 1995 attack in Tokyo. Some of the behaviors modeled and analyzed included the movement of New Yorkers out of the subways, through the streets and toward hospital emergency departments, and emergency medical services.

To develop advanced tools like PLAN C and the common drills and tabletop exercises used to inform decision-makers to prepare for disasters, depth of understanding about human behavior in emergencies is required. A critical human factors learning point in the Tokyo gas attack was that the number of psychological casualties outnumbered the actual medical casualties by a ratio of 4:1. In examining the “worried well” phenomena, other important cases pertain, such as the accidental release of cesium-137 in Goiânia, Brazil, in 1987. In this instance, the ratio was on the order of 500:1, with the Brazilian government opening the Olympic soccer stadium as a medical screening site to handle the 112,000 area residents who turned out for medical screening believing that they

were exposed to potentially deadly radiation. Of the first 60,000 who arrived, more than 5,000 had symptoms consistent with radiation sickness, though none had been contaminated.

The “worried well” effect has proven critical in the first wave of H1N1 experience earlier last year. On May 25, 2009 – the worst day of the swine flu outbreak – New York City hospital emergency departments saw more than 2,500 patients with flu symptoms compared to only 150 on the same day in 2008. These patients, many driven by fear and misinterpretation of other symptoms (allergies, stress responses, etc.), and very few required hospitalization. From the second to the third week of July, the UK experienced a doubling of new H1N1 cases with more than 100,000 new cases triggering a run on pharmacies for gloves, masks, antibacterial gels, and thermometers. A key lesson learned in many countries was that the overwhelming surge for healthcare services or supplies slowed or stopped response efforts in their tracks.

Including Behavioral Response In Exercises

Organizations cannot afford to ignore human response to adverse and unusual situations. The behavioral response may be so significant that it must be anticipated and incorporated throughout exercises and drills to ensure that plans will hold up to the realities presented by these behavioral challenges. The exercise design challenge lies in developing a scenario that participants can recognize would likely evoke potentially harmful human behaviors if the event were real. Exercise participants should be expected to react to such behaviors and make decisions about how their organization would manage the situation. In order for participants to make informed decisions, they need to know something about potential human reactions to dire events and what options they may have for mitigation. Such an exercise is not merely an opportunity to practice decision-making and team play, but also an opportunity to learn the nature of extreme and rare situations – such as a dirty bomb, pandemic, or civil strife – and what their options may be in dealing with the human response to such situations. Such response may be based upon their organization’s actual readiness to react or may be based upon some presumed preparedness not yet actualized. In either case, accurate behavioral assumptions are critical to mitigation activities and decision-making, and participants need to be briefed on these matters at the outset of the exercise and all during the exercise as the scenario introduces new concerns.

Some exercise designers attempt to evoke genuine emotional reactions among participants with the use of graphic videos and panic-laden interventions. These attempts are not likely to be fruitful. Exercise participants are unlikely to indulge in fear-motivated behaviors themselves for two reasons: (1) they know it’s only an exercise; and (2) typically, even in a real event, only a small percentage of the population will exhibit potentially disruptive behaviors. The way to inject them into an exercise efficiently is to describe them succinctly.

- “Distracted employees indicate they regret coming to work and are wandering the office creating disruptions.”
- “Employees are reporting symptoms of radiation sickness – nausea, rashes, etc.”
- “Crowds are huddled around newscasts, and rumors abound as the press raises concerns.”

More important than emotional provocation is the realistic presentation of management concerns that are likely to occur and a sense of urgency in making informed decisions. This is accomplished by simulating a realistic decision-making environment, establishing roles and accountabilities, and providing repeated scenario escalations that challenge decision-making capacities in short time frames. The facilitator needs to encourage thoughtfulness about the realities of the scenario, including mitigation options resulting from organizational readiness and the likely human responses in carrying out these mitigations. Where the organization is not well-prepared to deal with the human factor, the exercise can serve to raise awareness about that requirement.

Emergency response and recovery plans that ignore behavioral response invite failures when the plans are needed. Management needs to be aware of likely behavioral responses and needs to practice decision-making in the light of accurate behavioral expectations. Exercises that do not incorporate such considerations are imperfect, and imperfect practice makes for imperfect action.



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