# Practice Makes Much, Much Better

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> "On June 3, 1980, officers at the U.S. Strategic Air Command (SAC) were routinely watching for signs of a Russian missile attack.…Suddenly, a computer display warned that the Russians had just launched a sortie of land- and submarine-based nuclear missiles. In several minutes, the missiles would reach the United States.
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> "SAC responded immediately. Across the country, more than 100 nuclear-armed B-52 bombers were put on alert and prepared for takeoff. Nuclear submarine commanders were also alerted, and missile officers in underground silos inserted their launch keys into position.…Then, just three minutes after the warning had first appeared, it became clear that the alert was a false alarm.…Following a second false alert several days later, the Defense Department [found]…a computer chip worth $0.46 had malfunctioned.…
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> "The reaction people had following these false alerts was fascinating.…Opponents of nuclear deterrence reported feeling *less* safe, and supporters (who pointed out that the United States did not, after all, go to war) reported feeling *more* safe."[1]

Listen to experts in medicine, health care, government, employers, antiviral manufacturers, critical infrastructure, and so on, and you may conclude it is blindingly obvious that we, the world, are seriously vulnerable to pandemic influenza, and terribly unprepared for it. It's not subtle. So, why aren't governments and businesses preparing *now*? Why do some people apparently feel safe when others don't?

Here are two related questions.

1. Everyone wants to be prepared, so why is it a struggle to get them to prepare?
2. Everyone wants to do well in a crisis, so why do we often perform badly?

We'll come back to those questions.

What do we need to be prepared? We need relevant equipment, hardware, stockpiles, maintenance, plans, and education. If we have those things, we will be better prepared. We already know that part. And here's another part we already know. We are not really prepared if we don't practice.

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[1] *The Psychology of Judgment and Decision Making*, Scott Plous, p140.

I mean a special kind of practice, though. I don't mean the kind that rehearses bits and pieces in on a sunny day when the electricity is flowing, the cell phones are working, and the police are available. I mean the kind that runs you through an intense experience where things go wrong the way they do in real life. I don't mean the crisis equivalent of board games; I mean the crisis equivalent of war games. I don't mean the kind that describes the difficulty of making tough decisions; I mean the kind where you *make* tough decisions.

Imagine you're on an airplane. It takes off, and everything seems completely fine. Then, five minutes after takeoff, you hear a loud BANG! No one has to tell you that noise isn't normal. You look out the window. It's a night flight, and you expect to see black sky. Instead, you see flickering red, and you realize an engine has caught fire. I was on an airplane where that happened. The flight crew didn't say "don't worry, it happens all the time," because it doesn't. They might well have said, though, "don't worry, we do it all the time," because they practice.

Modern airplanes are amazingly strong and engines almost never have problems. I for one would not expect an airline to train their crews for such a rare event. They do train for it, though. Because they practice the flight crew knew what to do, and they did it well. If you'd slept through the bang, you'd have sworn that nothing was wrong when the plane landed.

We need to practice decision-making for crises *because* crises don't happen all the time.

## Decision-making for a flu pandemic

What does it mean to practice decision-making for a flu pandemic?

We sometimes practice decision-making in tabletop exercises. The advantage of tabletops is that they're familiar and relatively stress-free. Those are major disadvantages, too. Because they are familiar and relatively stress-free, tabletops are unrealistic and subjective.

Sometimes we practice decision-making in field exercises. Well, not so much; field exercises are more often about rehearsing or about finding implementation problems in a plan. They're not about testing different decisions or even decision-making. Field exercises are much too expensive and disruptive for experimenting with different decisions, not to mention that some decisions and scenarios are simply too dangerous to test in the field.

## Crisis simulations

People often think about flight simulators as an example of how to train and practice. With flight simulators we have specific knowledge, and we want to impart that knowledge and develop habits. We train a narrow group of people, pilots. That's not like practicing for pandemic flu, where there are big unknowns and we need to train many people with different jobs.

Simulating pandemic flu decision-making isn't much like simulating or analyzing 9/11, London, Madrid, and so on. Those crises are relatively localized, and they're mostly over in a moment. True, there are ripple effects and downstream consequences, perhaps massive downstream consequences, but there is little opportunity to prevent further direct damage. The training we do is mostly about emergency response (as well as upping security, of course). That's different from a crisis. Professor Arn Howitt of the Kennedy School of Government at Harvard University says what makes a crisis special is that a crisis combines emergency with novelty.

Decision-making for a flu pandemic is somewhat like Hurricane Katrina. We had experience, we had warning, we had plans; however, we made tragic mistakes, in part because we mistakenly thought we were prepared to make the necessary decisions and make them well. (Perhaps, too, we felt "safe" because we dealt reasonably well with previous hurricanes and because leaders insisted we were prepared.) Those mistakes were partly because of the novelty of a Category 5 hurricane hitting a major city. More importantly, they were also because of human failures in decision-making. There's no reason to believe that human failures in decision-making are limited to Category 5 hurricanes hitting major cities, though; we'll face them in a pandemic too.

A flu pandemic is somewhat like SARS. Almost random spread, the potential for panic, the irrelevance of national and continental boundaries, ideal breeding grounds (crowded cities) and transmission paths (jet travel and mass transit). However, SARS isn't as dangerous or sneaky as flu because, unlike flu victims, people infected with SARS feel sick before they can pass it on to another person.

In some rather interesting ways, a flu pandemic is like Chernobyl. There, to an extent greater than Katrina, we had a situation in which trained, experienced experts ran the whole show. Unlike flight simulators, where we have knowledge that we need to teach, Chernobyl exemplifies crises where we have to *discover* what to do, and no one has relevant experience because it simply hadn't happened before.

Here I'm going to draw from *The Logic of Failure,* by Dietrich Dörner, Professor of Psychology at the University of Bamberg in Germany. He said "psychological factors account for it [Chernobyl] entirely." The irony of Chernobyl is that, as he says, there was no failure, in the sense that someone fell asleep or pressed the wrong button or wasn't trained. There were no equipment failures either: the machines did what they were supposed to do. The human experts *purposely turned off the safety systems* and tried to operate the reactor manually. We know what we're doing, they believed. We've done it before, no problem. (An additional irony is that people usually get positive reinforcement for disobeying safety rules, at least in the short term.)

We know how to train pilots. We know how to train cops and firefighters, at least for most situations. We thought we had training for Katrina and Chernobyl, and we found it wasn't enough. For Katrinas, for Chernobyls, for pandemic flu, we need a new kind of learning, a new kind of simulation.

## Responses to simulation

Let's return to our initial questions. Everyone wants to be prepared, so why is it a struggle to get them to prepare? Everyone wants to do well in a crisis, so why do we often perform badly?

I've worked with simulation for many years. My colleagues and I have conducted over 100: business war games on six continents for pharmaceuticals, airlines, telecommunications, and other industries, and crisis simulations for a terrorist attack, police emergencies, and pandemic flu. Diverse as they are, five things stand out for me across all those simulations. I'd go so far as to say they are universal.

1. People go into simulations thinking they know the answer and they are ready. That's a key reason why it's a struggle to get people to prepare: many of us think we already *are* prepared and that we (or those we count on) already know what to do. When we experience a simulation, we learn it's not so.
2. While they're in the simulation, people are surprised by how complex the scenarios are. They think dealing with problems is someone else's job, and they're surprised to find out how much is their job and how much they have to coordinate with other people. That's a key reason why we don't do well in a real crisis: because few people have dealt with really bad situations and their cascading effects, few of us really know what to do.
3. People come out of simulations with insights, ah-ha's, and ohmygods. They learn that it's easy to make mistakes and fall into traps. They watch death tolls rise and learn it really *could* happen to their community. Many of their insights are things that we could learn no way other than simulation. *Telling* someone they can make a mistake is different from someone *experiencing* making a mistake. Feeling is believing.

4. People gain knowledge and learn skills that work no matter what scenario they encounter. Those skills range from the specific (e.g., how to coordinate better with counterparts in other departments) to the general (e.g., making good decisions efficiently and with incomplete information). It is fatally optimistic to expect decision makers to get it right the first time when they confront highly complex, interconnected, high-stakes decisions. (And let's not confuse decisiveness with effectiveness.)
5. People make better decisions after the simulation than before.

You might not have believed those observations if I'd told them to you before you saw the simulation. That's the point. That's the impact of simulation.

Here are some examples of what people learn in simulations.

- Well-meaning actions can have unintended consequences for other people. Closing schools may cut off one path of contagion in a pandemic, yet it may also lead to essential workers staying home to take care of their kids. Closing a city's bridges after a bomb goes off on one bridge may prevent injuries if another bomb was planted, yet it also prevents emergency vehicles and mutual aid from getting through.
- "Obvious" decisions often aren't. We had 100 expert observers watch a live simulation via closed-circuit TV. At one point, we asked them to use an electronic voting system to indicate which of four possible decisions they would make. Their answers split, almost exactly 25% for each of the four. That means even experts disagree on what to do. It also means that if someone needs to predict what someone else will do, their prediction will be wrong some 3/4 of the time. That's one reason for what people call lack of coordination in a crisis.
- They learn about their own behavior. One person in a pandemic flu simulation spent all his time looking at the state's response plan (which was available in the simulator) for "right" answers. He never found right answers, and he never made a decision.

People unconsciously make heroic assumptions. I spoke with a hospital administrator who said her hospital runs drills with 140 casualties. Why 140?, I asked. She said that her hospital has 140 beds. What if there are more than 140 casualties? Who will handle security if the hospital is deluged due to a pandemic, a major accident, or a terrorist attack? Well, she responded, the police will take care of security. So, her hospital was rehearsing (not practicing) for a sunny day when the electricity is flowing, the cell phones are working, and the police are available.

## What simulation is good for

So, what is simulation good for? At least eight things.

1. *Marketing,* to break through the delusion that it won't happen here and the illusion that we are prepared.

2. *Skills,* by practicing where it's safe.
3. *Validating plans,* by seeing whether it works… including the way people will implement the plan.
4. *Discovery,* by uncovering what your organization can or should do differently.
5. *Training and education,* by teaching best practices to emergency responders and decision makers in a way that makes a lasting impression.
6. *Coordination,* by helping decision makers see how their decisions affect other people and the decisions they must make.
7. *Out-of-the-box thinking,* because people see that they've *got* to do something different.
8. *Leadership, confidence, wisdom, and action,* because decision makers live through the crisis. They get the experience they need, before they need it.

In a more-personal way, here's what simulation is good for. As a citizen, I don't want business and government decision-makers to first encounter tough, complex decisions when they're making decisions for real, any more than I wanted my pilot to say "gee, I've never seen *that* before" when the engine on my plane blew up.

You know the statistics for how many people might die in a pandemic. There's a wide range between the high and low estimates. What will make the difference between getting the low numbers and the high numbers? Some of it has to do with things over which we have no control: will the index case get off a plane in Fairbanks, Alaska, or Manhattan? Some of it is about hardware, stockpiles, and procedures. And some of it is about the quality of our decisions.

Nobody ever intentionally makes bad decisions, yet bad decisions get made. Nobody ever writes a plan that they expect will fail, yet plans fail. We have a choice: We can learn *from* experience, or we can learn *before* experience. We can learn where it's dangerous, or we can learn where it's safe.

Simulation is the best and only way for people to practice tough decisions safely. They can learn from their mistakes where it's safe. They'll know what to do because they do it all the time.

## About the author

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Mark designed CSI's DXMA™ crisis simulator (patent pending) and ACS's award-winning ValueWar® business simulator. He has published extensively, and he has lectured and consulted on six continents. He earned his B.A. from Yale and his M.B.A. from Harvard.

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