



# Ebola Taught Value of Preparation, Vigilance

JOHN MORRISSEY

**T**he next fast-spreading infectious threat to community health is out there somewhere. Maybe it is deplaning from a long international flight with a host, ready to cut loose in an ill-monitored microbial haven where it can grow stronger, resist an antibiotic defense, then fan out in meandering, unpredictable attack.

Health care systems and public health agencies, already slammed with daily medical interventions and occupied with keeping the usual local germs in check, are the sentinels and the troops expected to detect such bigger pathogenic dangers and respond quickly and surely to safeguard their communities.

Judging from the overall response to a recent Ebola threat, a current Zika threat and other outbreaks so far this century, “We’re not exactly where we need to be in terms of preparing our health care system for the unexpected,” said Dara Lieberman, senior government relations manager for the Washington, D.C.-based advocacy group, Trust for America’s Health.

The preparedness is uneven. “In some urban areas, you have very resilient hospitals; and in some areas where there may be not that many hospitals, or not that many resources for hospitals, their preparation may be a lot different. There are hospitals in Alaska that didn’t even have ventilators [for the Ebola response]. So there’s going to be a variation across the country,” said Amesh Adalja, MD, a senior associate at the UPMC Center for Health Security, Baltimore.

Reducing this variation is of utmost importance. It calls for banding together to fight the totality of the potential onslaught, not just what a health system may see in its own facilities — a

cooperative and more comprehensive effort that will bring smaller or less-prepared entities with it.

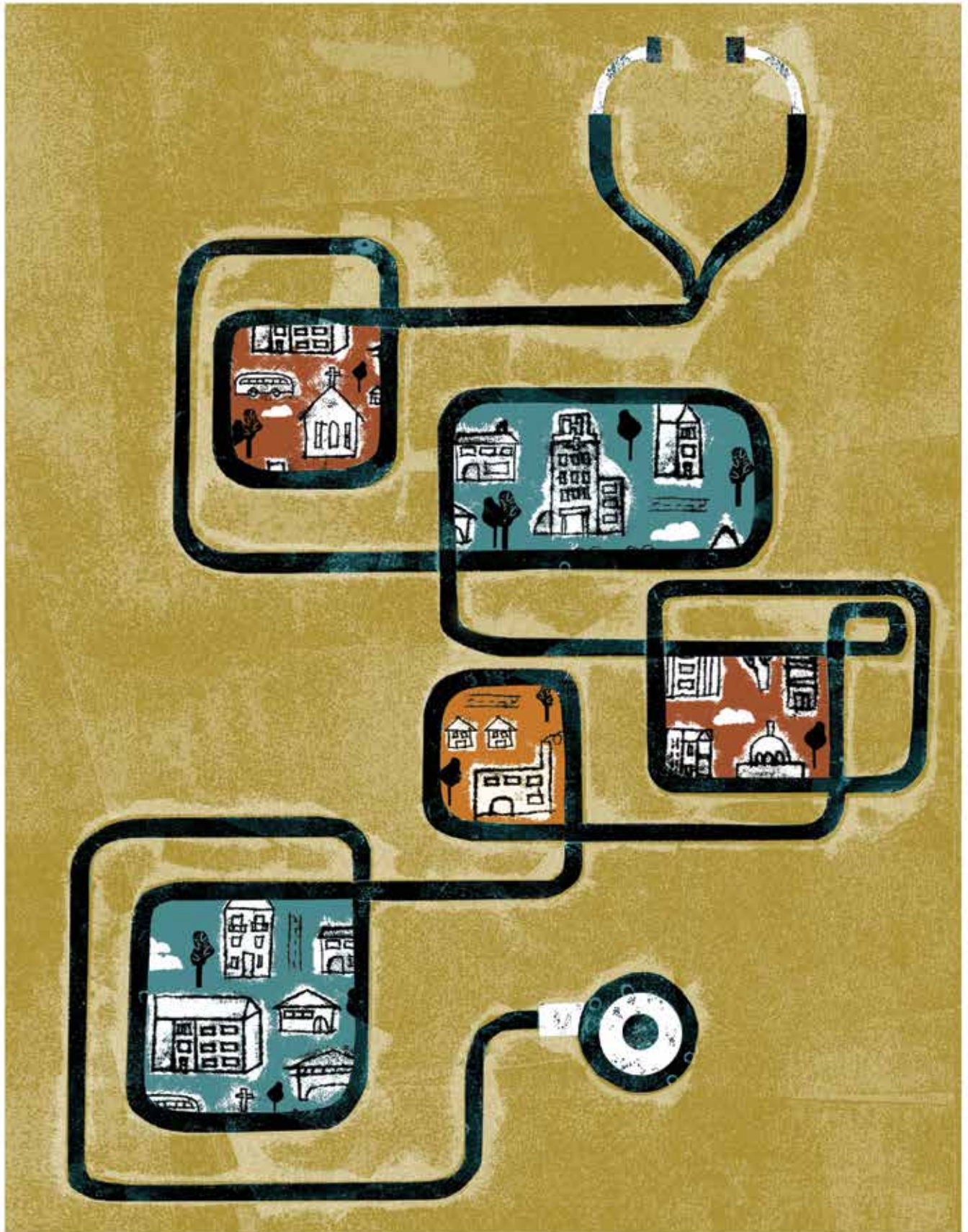
Such coalitions aim to develop solid response procedures that are locked in place, drilled into the medical force and fully understood, and to inject an urgency difficult to instill for a “maybe someday” threat that involves taking resources away from the daily acute challenges.

## CORE MISSION

But a team well-prepared for the big disease threat has corollary benefits for routine vigilance.

“It overlaps with hospitals’ normal everyday requirement to be prepared for infectious diseases,” said Eric Toner, MD, also a senior associate at the UPMC Center. “The same things that make a hospital prepared for Ebola would make it better prepared for dealing with MRSA or many of the other bad bugs we now find throughout the hospital.”

Adalja said that although the health care delivery system has improved its readiness, “a lot of hospitals . . . may think it’s not something that is very important to them.” He said hospital leaders “have to realize that the emergency preparedness for all hazards, including emerging infectious diseases, which we are becoming more likely to see, has to be part of the core mission of the hospital,” a function “just as important as other clini-



Lorraine Tuson



cal departments that get a lot of attention and funding.”

### LESSONS LEARNED

Lessons still are being learned from the Ebola outbreak in West Africa and consequent moves to direct the defensive measures in the U.S. The 2014 eruption exposed the variable ability to respond based on rigorous and evolving instructions from the Centers for Disease Control and Prevention, while prompting a mobilization on a scale some say, in retrospect, was too much to ask of the average acute-care hospital.

“The assumption that we in the United States made during the first Ebola cases here was that any hospital could treat someone with Ebola. And that proved to be false,” said Lieberman. With appropriate training and supplies, and space in place, a hospital could rise to that challenge, “but it was beyond what a hospital could do without any prior knowledge of such a case — it was such an infectious agent.”

After isolated cases cropped up in Dallas and New York City, CDC Director Thomas Frieden, MD, MPH, declared in a news briefing, “It’s very important that every hospital be prepared to diagnose someone with Ebola.” No other cases arose, which raised the question of whether the all-hospital vigilance made sense from an operational and a financial standpoint, said Mohamad Fakih, MD, MPH, who directs antimicrobial stewardship and infection prevention at Ascension Health, St. Louis. “Millions were screened — negative. So think about the return on investment or the yield of the screening.”

Besides the staff and resources taken from other needs, the exercise was not helpful in sustaining support for efforts to contain other potential threats, said Fakih. “When people screen tens of thousands and none is positive, how often do you think these people will take it seriously? So that’s a problem.”

At Seattle-based Swedish Medical Center, part of the Providence Health & Services system, “We invested a lot of time, effort and energy in Ebola,” said Michael Myint, MD, MBA, vice president of quality. “We created drills and plans and an isolated area in the hospital to take care of Ebola patients.” For all that, “We had one activation of that within our hospital system — we had a patient come in from West Africa with fever.” The

patient didn’t turn out to have the pathogen, but it could have been so, leading to “a lot of effort on that one patient” as long as the cause of the fever was unknown, Myint said.

Changes in CDC missives made effective and efficient preparedness elusive. The uncertainty, combined with an undertow of fear after the Dallas exposure, led to “a cascade of errors leading to a national panic, which did not have to be,” said Adalja.

Ebola gowning requirements, for one, evolved substantially over a short period of time, “based on how scared they were as far as potentially exposing health care workers and patients,” Fakih

**“The assumption that we in the United States made during the first Ebola cases here was that any hospital could treat someone with Ebola. And that proved to be false.”**

— DARA LIEBERMAN

recalled. “And a lot of it was emotional rather than objective.”

“Public health entities, the CDC, health systems, state hospital associations and the QIOs [quality improvement organizations] need to all work together on figuring out what’s cost-effective and helpful,” said Fakih. “We have to work as a team, no one can do it on their own — but at the same time, not to have reflexive decisions rather than a thoughtful decision on what to do.”

### PUBLIC HEALTH PARTNERSHIP

Despite the stress and strain on health care delivery systems across the country, the Ebola response yielded or strengthened cooperative arrangements that could make for a more seasoned approach to beating the next big bug. It also underscored the partnership necessary between health care providers and the local and state public health apparatus, such that they “have to be so much more intertwined and collaborative,” as Lieberman put it.

“Hospitals need to make sure that they know who’s in their public health department and have that person be an active participant in some of the hospital’s discussions of emergency planning,” Adalja said. The onset of an infection crisis is

not the time “to just be introduced to the head of your health department; you want to know these people ahead of time and have a good relationship with them, so you can coordinate response activities.”

Hospitals may be pressed into service in a regional emergency, but it’s the local health officer “that is the individual who’s generally statutorily responsible for the health of the community,” said Karen DeSalvo, MD, MPH, MSc, acting assistant secretary for health in the U.S. Department of Health and Human Services and formerly New Orleans health commissioner. “And it’s everybody who lives and works and learns and plays there, not certain populations that are attributed or assigned to a health system,” she said. DeSalvo, in her HHS role, was responsible for mobilizing a U.S. effort in 2014 to establish a temporary hospital facility in Monrovia, Liberia, Ground Zero of the Ebola epidemic.

The division of labor between health systems and public health must be worked out and understood, said Lieberman, not just to define roles but also to coordinate between the two sectors. “Public health doesn’t always understand how health care is delivered on the ground, and that’s a really important lesson that health care facilities can provide,” she said.

#### SITUATIONAL AWARENESS

In the Seattle area, the Northwest Healthcare Response Network has integrated health care and public health starting in 2005 as a program in the local public health department and since 2014 as a not-for-profit with government and provider funding. Executive Director Onora Lien, MA, describes it as the “first conduit for situational awareness” in an emergency response, coordinating the resources needed and triggering aspects of a thoroughly planned communication and mutual

### PROCEDURES FOR SCREENING CAN BE MOVING TARGETS

**A**t some point in the U.S. Ebola response, federal detection efforts shifted to monitoring travel originating from West Africa instead of relying on all hospitals to screen millions of people for the virus. The travel screening program wasn’t the most efficient use of resources for Ebola — but, in general, it’s a critical activity that should remain in place, according to preparedness experts.

Some procedures very specific to blocking the Ebola threat now can be dropped, “but there are many, many more things that hospitals and health care systems need to be thinking about making just a lot more of a routine in their day-to-day,” said Dara Lieberman, a senior manager for Trust for America’s Health. Asking about travel history when a patient shows certain symptoms of an infectious disease “could be useful information no matter what threat we’re facing,” she said.

The process isn’t as simple as read-

ing from a computer screen and following prompts depending on the path of the conversation. A variety of people from nurses to data input clerks have to understand the what and why of the exercise, and the information loaded in has to be up-to-date and accurate. The hospital or physician office also needs expertise on how to react to, and then act on, disquieting findings.

The particulars of such screenings are moving targets, changing to reflect outbreaks erupting or waning in the world, and what symptoms should be added, maintained or no longer monitored based on current status. That involves computer software tweaks on a frequent basis, and the time and training it takes to relate the revisions to affected staff, said Mohamad Fakh, MD, Ascension Health’s infection control director.

In a push underway at Ascension Health, if a patient has any of three main symptoms of emerging patho-

gens — fever, rash, respiratory difficulties — syndromic surveillance kicks in with questions about travel history that

**A variety of people from nurses to data input clerks have to understand the what and why of the exercise, and the information loaded in has to be up-to-date and accurate.**

reflect what’s been happening recently, not just nationwide, but worldwide, Fakh said.

The issue is how fast to update the content and interactive line of inquiry; the fact that Ascension Health has six different electronic health record plat-



## Hospitals may be pressed into service . . . but it's the local health officer "that is the individual who's generally statutorily responsible for the health of the community."

— KAREN DESALVO, MD

aid mobilization among participating health systems, public health agencies, emergency medical services and more.

Regional coalitions, subsidized by the HHS Office of Assistant Secretary for Preparedness and Response, are gathering momentum. Many are relatively nascent but trying to cut across tra-

ditional boundaries, said Toner. "These coalitions are hard: Hospitals are competitive; the different agencies . . . all work within their own silos."

A rule mandating emergency preparedness issued by the Centers for Medicare and Medicaid Services in September 2016 figures to boost that momentum. It requires that any Medicare or Medicaid provider or supplier meet conditions of participation around preparedness, such as having a plan in place and training staff to execute it.

### BUILT-IN READINESS

Early in the Ebola response, the Seattle coalition realized the treatment of hemorrhagic fevers and other highly infectious diseases required "a very high-capacity and very resource-intensive level of readiness," said Lien. If a few area hospitals could focus primarily on assessment of suspected cases and treatment when confirmed, they could build the necessary skill set and sustain it while the remainder of the coalition stuck to basic screen-

forms across its network makes updating no small task. "It's a never-ending story with emerging pathogens," he said. "And they're different — the way they present is extremely different from each other."

Yet health departments and infection control providers say one of their biggest priorities is to get health care organizations to use travel screening, and it should be consistent and standardized across a region, said Onora Lien, who directs the preparedness coalition serving the Seattle area. "It's the best tool for us to detect earlier what's going on with that patient, or at a community level to have a better sense of what our vulnerability is." Disease threats will change, but if a patient comes to a doctor's office with a cough and can be asked about travel to a current hot spot, providers can more quickly deduce the connection.

Once the Ebola routine revealed a pattern of travel screening for naught,

Lien saw increasingly uneven performance on that undertaking, and not all clinics in the region wanted to continue it. Not only should it continue, but it should be standard practice, Lien maintained. "You don't stop asking," she said. "It should be an expectation of every emergency department, or every urgent care clinic, every outpatient clinic."

To head off resistance to doing the travel screenings because they're not getting hits, "we have to constantly monitor the threat and be sure that we turn off the surveillance when it's appropriate, so that we're not asking things that aren't absolutely necessary," said Kim Moore, MD, associate chief medical officer of CHI Franciscan Health, based in Tacoma, Washington. Those changes "aren't made in a vacuum" — the decisions rely on consultations with the Centers for Disease Control and Prevention, the health department and the system's infection

prevention medical director.

Human factors and staff courtesy enter into building support for the task, said Michael Myint, MD, Swedish Medical Center's vice president of quality. Staff members in outpatient clinics "have to have faith that we are evaluating what's going on and that we stop things that are no longer necessary," he said. Already juggling their other duties, they have to be assured that "we care about their time, efforts, energy and really think about value and safety in the decisions that we're making."

A second element in gaining support is to "hardwire those things that we feel need to be done, given that model," Myint said, which makes an electronic screening system so user-friendly and reliable that "we make it easy to do the right thing all the time."

## HOSPITAL-BASED NETWORK TAKES COALITION APPROACH

The Northwest Healthcare Response Network already had more ability than most regions of the country to handle stiff challenges due to emergencies, including managing infectious diseases. Then the Ebola threat became real, and the coalition had to up its game.

The network, which encompasses nine hospital-based health care organizations in and around Seattle, including Catholic-sponsored Swedish Medical Center and CHI Franciscan Health, is a prime example of the coalition approach that has been fostered by a dedicated office within the U.S. Department of Health and Human Services, with a total of \$255 million annually to subsidize and encourage such initiatives.

“It is through that funding that coalitions get built, and one of the expectations is that coalitions build the kind of capacity to do mutual aid resource sharing,” said Onora Lien, the network’s executive director. “The spirit of what coalitions are trying to become nationally is that of a vehicle through which you integrate normally competitive organizations and build processes for them to share information, or to share resources . . . to build plans about how they will respond together, not just independently.”

“The network has been great, because they really bring together all of those health care organizations in King County and Pierce County,” said Kim Moore, MD, vice president of quality and associate chief medical officer of CHI Franciscan Health, Tacoma, Washington. “Just the fact that we are talking, having a conversation about what we’re all doing to prepare, is invaluable.”

“When we think about the threats from infectious-disease pathogens,” Moore added, “our responsibilities as a health system are to make sure that we are abreast of all the new devel-

opments and that we are addressing those so that we can really keep our community as safe as possible.”

The Centers for Disease Control and Prevention includes Seattle as a designated quarantine station, and consequently, “there is some degree of baseline capacity and capability within the hospitals to do infection control,”

**“Ebola created some unique threats; this did force us to pivot in terms of hospitals being able to create the appropriate kind of capacity to potentially manage an Ebola patient.”**

— Onora Lien

Lien explained. “But Ebola created some unique threats,” and “this did force us to pivot in terms of hospitals being able to create the appropriate kind of capacity to potentially manage an Ebola patient.”

The resulting investment and training regimen “has helped us tighten up some of the relationships that caused us to develop, for example, a regional acute-care disease plan,” she said, and for the first time the preparedness was multijurisdictional: It spanned more than one county, coordinating fully among the hospitals, EMS and public health, including at the state level. That first formal plan at the larger scope was used to test the concept of the three-tiered model for other diseases. Perspectives were mixed.

On one hand, the resource accumulation and training associated with the regional plan made hospitals more prepared for a disease emergency. “There’s a burden in having to sustain

that, but we think it mattered, it made a difference and we’re better off today for that work,” Lien noted.

That said, there is some debate over whether the same Ebola hierarchy for treatment, assessment and screening is the only way to go for other diseases. In a region of capable hospitals, and given a scenario envisioning an outbreak with many more sick people than would be expected in an Ebola emergency, the network should be able to turn to more hospitals to handle treatment, she said. In addition, not every disease is equal — they require different community levels of understanding, the characteristics are different, thus response needs are different for personal protective equipment and so on.

But the practice of reacting to an assortment of contagions in largely the same way arguably is the norm already, said Michael Myint, MD, vice president of quality for Swedish Medical Center. “We have to learn our way through these. I’ve personally gone through many of these cycles, with H1N1 [avian flu], with MERS [Middle East respiratory syndrome], with Ebola; and with each one, the approach is somewhat similar.”

Measles, for example, “is incredibly contagious, actually more so than many of these other diseases, and we have to be able to recognize that on a regular basis, because a measles case could walk in today,” he said. Even with very different characteristics, “the constant is early recognition of bad stuff.”

The Ebola-type, three-tier setup is a good model for a more permanent preparedness structure, Moore said. “It’s important to maintain the capabilities, and I think that all of the preparatory work is transferable to other special pathogens should they arise. It’s important work, and it isn’t work that is going to become obsolete.”



ing. This three-tier approach — screening, assessment, treatment — became the organizational model formally adopted by the CDC, she said.

A three-tier approach also works within a hospital, assigning different levels of duty to appropriate staff, says Lieberman. Front-line workers are trained on what to ask incoming patients and to do basic infection control. A person above them is trained in isolation procedures, and up another level, treatment procedures. Implementing that will increase preparedness with logical organizational efficiency, she said.

Coalition leaders post-Ebola can adapt the lessons from that period to their ongoing efforts. Seattle-area coalition participants both saw the benefit of preparedness and recognized that in their usual, ongoing emergency prep, “we weren’t prepared for this one,” said Lien. “Ebola has given us the opportunity to have more explicit conversations and more explicit planning that I know will help us with other disease outbreaks.”

Groups of experts such as the UPMC center and Trust for America’s Health decry what they see as a cycle of mobilize and dismantle every time a big outbreak rears up. Some permanent structure has to be created for continuous capability, said Lieberman. “Rather than start [every time] from scratch, a good place to start might be the tiered system that was developed during the Ebola response.”

And even with the end of the Ebola threat, she added, the question of where someone has traveled “needs to be a routine part of our screening.”

Meanwhile, information gathering and dispersal at the federal level gets more finely tuned.

Clinical information learned during treatment efforts in Monrovia became a part of what clinicians around the globe were able to use to treat the particular strain of the virus, from complications to protection levels, said DeSalvo. Returning doctors were able to offer guidance to the CDC and National Institutes of Health. “So there were a lot of ways that we’ve brought back lessons learned and applied then to what else the U.S. government was doing to help support the health care infrastructure,” DeSalvo said.

#### REMAINING VIGILANT

The accumulated knowledge about how to surmount a national or worldwide scale of outbreak can be carried forward for large-scale threats as well as for ordinary vigilance and infection control.

“Sometimes we think of things like Ebola as being way out in left field,” said Myint. “[But] we deal with, on a daily basis, unexpected things that we need to be aware of, some of which are contagious, some of which need rapid assessment, evaluation and treatment.”

“We think of constant vigilance as part of our core mission anyway, because we have to have constant vigilance for the regular stuff,” Myint emphasized. The challenge is to organize to get new information fast and accurately and do tight quality management around a response plan. “Everything we did for Ebola was designed to be re-used in different situations,” he said. In planning and execution for “the big one,” “we think about it as an extension of what we do every day.”

“The more resilient you are, and the more prepared you are for emerging pathogens, the better you’re going to be at responding to the ordinary pathogens,” said Adalja. In terms of vaccination, anti-viral policy or infection control policy, “The fact is, if you can prepare very well for avian flu, you’re definitely prepared for seasonal flu.”

The health care community has a critical role to play in “everyday community resilience” and not just sudden threats, said DeSalvo. Public health officers are charged with compiling and analyzing incoming data, but it’s hospitals that have to supply it reliably. When it comes to notifying authorities of reportable diseases, clinicians need to be diligent and “take that seriously, because that’s our sentinel,” DeSalvo said.

Tropical threats are what make the news, said Toner, “but what we’re not paying attention to is the tsunami of drug-resistant and hospital-acquired infections that are happening every day.” That’s the looming disaster, he said, and cases are beginning to pop up outside of hospitals, such as resistant strains of staph bacteria.

Attention to infection control “will make us better prepared for Ebola, but the focus should not be on Ebola,” Toner advised. Health care providers set the stage for success by curbing drug-resistant contagion first and foremost. “And if they do that,” he said, “then they will be much better prepared for Ebola and whatever the next nasty disease is that comes around.”

**JOHN MORRISSEY** is a freelance writer specializing in health care delivery, policy and performance measurement. He lives in Mount Prospect, Illinois.

JOURNAL OF THE CATHOLIC HEALTH ASSOCIATION OF THE UNITED STATES

[www.chausa.org](http://www.chausa.org)

# HEALTH PROGRESS®

---

Reprinted from *Health Progress*, January - February 2017  
Copyright © 2017 by The Catholic Health Association of the United States

---