January 2014
Vol. 17 No. 1

Ideas
Analysis
Insight

Best Practices IN EMERGENCY SERVICES

SAFETY FIRST

A groundbreaking document addresses the ever-present issue of safety in EMS.

By Jenifer Goodwin

From the dozens of ambulance crashes annually to the EMT in Hoboken, N.J., recently stabbed by a man reportedly demanding she hand over prescription drugs, the safety of EMS providers, patients and even bystanders is a growing area of concern for a broad array of stakeholders.

To begin tackling the issue of safety on an industry-wide scale, a committee of leaders in EMS and related fields recently released the "Strategy for a National EMS Culture of Safety," a 97-page report that's the culmination of three years of research, discussions and debate. The document, created by the American College of Emergency Physicians (ACEP), identifies the safety issues facing EMS and describes the need to create not just safety programs, but a culture of safety that's integral to every facet of EMS—from educating and training providers to the design and construction of vehicles to the way in which organizations handle and learn from mistakes. Written for policy-makers and leaders at the national, state and local levels, the document is intended to serve as a national framework, defining the scope of the problem and the core elements that a comprehensive safety strategy would encompass.

"This is a strategy document, not a safety manual or a how-to for the operational level," explains Rick Murray, director of ACEP's EMS and disaster preparedness department. "The Culture of Safety document identifies the components—whether it's education for the providers, resources for agencies or the role of data—that would be part of a safety strategy."

Continued on page 8

Highlights from this issue

Quick Look

ALAMEDA COUNTY OKs RATE HIKE, CHANGES PERFORMANCE MEASURES

After losing $21 million during the first two years of operations in Alameda County, Calif., Paramedics Plus was given the OK to amend the terms of its five-year 911 contract with the county, including hiking ambulance transport fees and simplifying the compliance measurement and penalty structure.

The Alameda County Board of Supervisors approved a transport base rate hike from $1,604 to $1,895 and a mileage increase from $36.91/mile to $45/mile. The amended contract will also reduce response time fines in certain circumstances and simplify the response time measurement structure, says Dale Feldhauser, chief operating officer for Paramedics Plus in Alameda County.

The changes should help the company get out of the hole in Alameda by year four of the contract, Feldhauser says. "We've lost money both years of the contract and we're probably going to lose money the third year," he says. "Do we have to break even? Yes. Are we there yet? No. But we're getting close."

Since taking over the Alameda contract from longtime provider American Medical Response on Nov. 1, 2011, Paramedics Plus has experienced a revenue shortfall, bringing in millions less than projected in the RFP that landed

Continued on page 5

Best Practices In Emergency Services (ISSN 1540-9015)
is published monthly by
The National Emergency Services Institute
679 Encinitas Blvd., Suite 211
Encinitas, CA 92024 • Tel. 760-632-7375 • Fax 866-448-1436

emergencybestpractices.com

Subscription rates: USA: one year: $279;
two years: $450 (save $108);
outside the USA: Please add $10 per year.

Best Practices is a membership benefit of the National EMS Management Association.

IMPLEMENTING PATIENT-CENTERED QUALITY MANAGEMENT

Part 6: Resources to help you get there

By Mike Taigman

Many of you have asked what you can do to learn more about healthcare quality and leadership. Here, in the last article of this series, we provide you with resources to help you do a deep dive into these topics. Remember, if EMS is to become a good partner in the healthcare world of the future, then those of you who are drawing the line for the cutting edge to follow will need to be able to think like hospital CEOs and chief medical officers. Here are a few suggestions to get you started.

BOOKS

***Transforming Healthcare Leadership: A Systems Guide to Improve Patient Care, Decrease Costs, and Improve Population Health* by Michael Maccoby, Clifford L. Norman, C. Jane Norman and Richard Margolies**

If you read only one book on healthcare leadership during the next decade, make it this one. It synthesizes the best information available on extraordinary leadership, the science of improvement and the Institute for Healthcare Improvement's Triple AIM and mixes it with a bit of Zen magic to create a wonderful read.

These authors are sought out by award-winning healthcare organizations worldwide for their expertise. Jam-packed with actionable wisdom, this book aims to help healthcare leaders "avoid imminent extinction, avoid threats that could seriously damage or destroy their organization, and to improve effectiveness." Here are a few examples:

- "Making it easy to do the right thing and hard to do the wrong thing shifts efforts away from blaming individuals working in a poorly designed system to developing and managing a strategically aligned system-wide improvement effort." It is time for us to quit having QI people sit in the corner with a red pen marking mistakes on patient care reports. It's much more effective to focus our energy on changing the systems we work in to make it easy to do the right things.
- "What is leadership? Leaders are people others follow. If no one follows you, you are not a leader. If you have followers, you are a leader. Leadership is a relationship. Good leadership means people willingly follow a leader who is working to further the common good, the well-being of all stakeholders. Good leaders make followers into collaborators. Leadership implies a relationship that cannot be handed off to anyone else."
- "Predictions are based on theories. Any theory we have represents our current knowledge about how some aspect of the system works or what we believe will happen in the future (foresight). When is our theory valid enough to begin testing our ideas for change? When leaders make theories (or hypotheses) explicit, this will guide people in an organization as they carry out targeted improvement efforts to accomplish the vision, which is a prediction about the ideal future of the organization. When leaders state their theories or assumptions, this also helps people design tests to validate these theories and make improvements from the results of these tests."

One of the most powerful things you can do as a leader is to point out that someone's declaration of the way things are is actually a theory. For example, a paramedic FTO recently stated, "I know when someone's manipulating the system with BS complaints to get pain meds." Actually it's her *theory* that it is possible to recognize drug seekers. Theories are testable, and it turns out that her theory did not hold up to scrutiny.

Think about all the theories you've heard declared as fact in EMS: Short scene times save lives; paramedics don't diagnose; people who are hemorrhaging need IV fluids to keep their BP up, etc.

For more information, visit maccoby.com and pkpinc.com/index.html.

***Out of the Crisis* and *The New Economics* by W. Edwards Deming**

My bias is that it is always a good idea to read the original source of the progressive ideas you're interested in. Deming is the epicenter of and foundation for most of the performance improvement thinking in healthcare. Although he passed away 20 years ago, his ideas are still considered radical and progressive by many traditional managers.

Within these two books you'll learn about his System of Profound Knowledge, his 14 Key Principles and his Seven Deadly Diseases. I guarantee that as you read, you'll think about which of the deadly diseases your organization suffers from right now. For more on Deming, check out deming.org.

***The Improvement Guide* by Gerald J. Langley, Ronald Moen, Kevin M. Nolan, Thomas W. Nolan, Clifford L. Norman and Lloyd P. Provost**

These are the guys who created the Model for Improvement that's been adopted by the Institute for Healthcare Improvement as their core framework for improving healthcare worldwide. The authors of this book served as Dr. Deming's staff/partners as he taught his principles all over the world. It's considered by most people in healthcare quality management to be the bible of making things tangibly, measurably better. Visit tinyurl.com/k76499t for information.

***Data Sanity: A Quantum Leap to Unprecedented Results* by Davis Balestracci**

When I introduce Davis at conferences I usually say, "If Deming and the Reverend Billy Graham had a child, it would be Davis." His passionate approach to making data analysis simple and accurate is reminiscent of church revivals.

His book, *Data Sanity*, is written for physician practices but easily translates to the world of emergency services. It makes complex improvement statistics accessible to, entertaining and usable by "normal people." Visit davisdatasanity.com to subscribe to his free Data Sanity newsletter.

***The Fifth Discipline* by Peter Senge**

Peter is one of the most engaging speakers and writers I've ever encountered. He's an MIT Sloan School of Management professor and is known for helping to introduce systems thinking to the masses. He's also the creator of the "Learning Organization" concept. Several of his presentations are available on YouTube.

His book, *The Fifth Discipline*, describes five disciplines that leaders should develop competency with:

1. Personal Mastery: Clarifying personal vision, focusing energy and seeing reality.
2. Shared Vision: Transforming individual vision into shared vision.
3. Mental Models: Bring to the surface internal pictures and understand how they shape actions.
4. Team Learning: How to suspend judgments and create dialogue.
5. Systems Thinking: Fusing the four disciplines, from seeing parts to seeing wholes.

Peter is also the founder of the Society for Organizational Learning. Visit solonline.org.

***Escape Fire: Designs for the Future of Health Care* by Donald M. Berwick, M.D., and Frank Davidoff**

Dr. Berwick is the founder and served for 20 years as the president of IHI. Most recently he served as administrator of the Centers for Medicare and Medicaid Services and is currently running for governor of Massachusetts. He's without a doubt the most effective leader in healthcare worldwide.

This book is a collection of essays that were each delivered as the opening keynote presentation for the Institute of Healthcare Improvement's annual National Forum. I've been attending this conference for 19 years and the crowd that gathers early to get a good seat for Berwick's opening presentation is rivaled only by Grateful Dead fans. I was fortunate to see most of these presentations live and they are just as inspiring to read.

In addition to the book, there is a powerful movie based on Berwick's views. Visit escapefiremovie.com for information, as well as the Escape Fire First Aid Kit, designed to help keep you out of the healthcare system.

***Designing Social Systems in a Changing World* by Bela H. Banathy**

Dr. Banathy was one of my professors and this book was the text for my Systems Thinking class. While it is the most challenging book on this list, it is worth the effort, showing you how to look at systems from several perspectives. Each view helps you better understand how things work and how they might be changed for improvement.

***Zen and the Art of Motorcycle Maintenance: An Inquiry into Values* by Robert M. Pirsig**

I know some of you will see this title and think, "Yep, Taigman's finally lost it." While philosophy is not for everyone, this wonderful autobiography about a father and son's motorcycle ride across America explores the concept of quality better than anything else I've read. It also teaches problem-solving and the philosophy of science.

Continued on page 11

MECHANICAL CPR DEVICE NO BETTER THAN MANUAL COMPRESSIONS: STUDY

Mechanical chest compressions were no more effective than manual CPR for patients who had an out-of-hospital sudden cardiac arrest, found a randomized clinical trial presented at a European Society of Cardiology meeting in September 2013.

In the study, by researchers from Uppsala University in Sweden, 2,589 SCA patients from six European sites received manual chest compressions as soon as EMS personnel arrived and were randomized to continue to receive manual compressions or mechanical compressions with defibrillation. LUCAS, the mechanical chest compression device, is made by Physio-Control and uses a suction cup to deliver compressions.

At the primary endpoint—four hours after the initiation of CPR—survival rates were similar in both the mechanical (23.6%) and manual CPR groups (23.7%). Other outcomes were also similar, including patients who survived to hospital discharge (8.3% vs. 7.8%) and with favorable neurological outcomes at six months (8.5% vs. 7.6%).

The study author told *MedPage Today* the results were disappointing because they expected LUCAS to overcome a main issue with manual chest compressions: that quality tends to diminish after a few minutes because people get tired. He noted that the time to first defibrillation in the mechanical group was delayed compared to manual CPR, which may have affected outcomes.

RAPID INCREASE IN ED VISITS FOR CALIFORNIA MEDICAID PATIENTS

New research bolsters EMS agencies' claims that they're seeing a spike in Medicaid patients and a reduction in the privately insured. Between 2005 and 2010, ED visits by California residents aged 19 to 64 increased by 13.2%, from 5.4 to 6.1 million visits per year, with the largest increase occurring in 2009. But the increase wasn't uniform: ED visits rose by 35.6% for Medicaid patients and 25.4% for uninsured patients, compared to only 1.2% for those with private insurance.

As a result, payer mix shifted. From 2005 to 2010, the share of ED visits among those with private insurance dropped from 43% to 38%, while those with Medicaid rose from 23% to 27% and the uninsured rose from 23% to 25%. The study, by researchers at the University of California, San Francisco, and colleagues, was in the Sept. 18, 2013, issue of *JAMA*.

MERS CORONAVIRUS CAN SPREAD IN HEALTHCARE SETTINGS

The MERS-CoV infection, a coronavirus that has killed up to 65% of those infected, spread from infected patients to other patients and healthcare workers in several hospitals in eastern Saudi Arabia in April and May 2013, found a study by researchers from the Global Center for Mass Gatherings Medicine in Riyadh. The outbreak confirms that MERS has the potential to spread widely in healthcare settings, infecting other patients, healthcare workers and even their families, according to an accompanying editorial to the study in the Aug. 1, 2013, issue of the *New England Journal of Medicine*.

The outbreak took place in three hospitals when two patients with MERS were admitted. One of those patients then directly or indirectly infected 21 others. As of June 12, 2013, 15 patients, or 65%, had died; six recovered, and two were still hospitalized. The investigators identified 217 household contacts and more than 200 healthcare contacts; MERS symptoms developed in five family members and in two healthcare workers. The study also found that one patient likely transmitted the virus to seven others, making that patient a "superspreader."

According to the editorial, MERS-CoV is a close relative of the coronavirus that caused severe acute respiratory syndrome (SARS), "a short-lived but alarming epidemic" in 2002–03 that sickened 8,000 and led to 800 deaths.

As of Sept. 30, 2013, there were 130 confirmed cases and 58 deaths, according to the Centers for Disease Control and Prevention. No cases have been reported in the U.S., although 82 people from 29 states have been tested. This summer, the World Health Organization said the virus didn't meet the criteria to declare a public health emergency, although it did say it is of "serious and great concern." On Sept. 26, 2013, the CDC published recommendations for patient evaluation, case definitions, home care and infection control for patients with MERS-CoV in the *Morbidity and Mortality Weekly Report*. Read it at tinyurl.com/mkzuxuc.

CONSENSUS STATEMENT ON CPR CALLS FOR QUALITY IMPROVEMENT APPROACH

Although high-quality CPR is a key factor in determining survival from sudden cardiac arrest, there's wide variation among EMS systems in how well CPR is performed. To ensure the highest quality CPR, EMS needs to take a continuous quality improvement approach, including monitoring performance, providing feedback and working as a team with clearly assigned roles during the response, according to "CPR Quality: Improving Cardiac Resuscitation Outcomes Both Inside and Outside the Hospital," an American Heart Association (AHA) consensus statement.

The AHA's 2010 CPR guidelines increased the focus on high-quality compressions, including minimizing interruptions, making sure compressions are delivered fast and deep enough, and avoiding over-ventilation. None of that has changed. The new statement, published June 25, 2013, in *Circulation*, focuses on the implementation of those guidelines at a provider, agency and system level. Strategies that have been shown to work include a "pit-crew" approach to CPR; reviewing each SCA response through discussions and the use of monitoring data; and having an ongoing CPR CQI program that provides feedback to agency directors, managers and providers. BP

— Jenifer Goodwin

Alameda County, continued from front page

them the contract, according to recommendations submitted to the Board of Supervisors by Alex Briscoe, director of the Alameda County Health Care Services Agency. Reasons for the shortfall, according to Briscoe and Feldhauser, include:

- Capital outlays such as buying 110 mechanical CPR devices for fire departments, state-of-the-art defibrillators and a sophisticated electronic patient care reporting system
- A shift in payer mix, with fewer patients having commercial insurance and more paying with Medi-Cal, California's Medicaid program
- A complicated response time measurement structure, with Paramedics Plus incurring large penalties for relatively minor violations

Using insurance data from 2007–09, Paramedics Plus projected its payer mix would include 34% Medicare patients, 12% Medi-Cal, 27% commercial insurance and 27% private pay, many of whom are uninsured. But as the economy deteriorated, payer mix shifted, with far more Medi-Cal patients and far fewer patients with commercial insurance, Feldhauser says. During fiscal 2011–12 (Nov. 1, 2011, to Oct. 31, 2012), actual payer mix was 35% Medicare, 24% Medi-Cal, 20% commercial insurance and 22% private pay.

That 7% drop in commercially insured patients played a large role in Paramedics Plus bringing in $10.5 million less in revenue in fiscal 2011–12 than projected, Feldhauser says. Total losses for 2011–12 were about $12 million, or $48 million total revenue and $60 million in expenses. The exact figures for fiscal 2012–13 are still being compiled, he says.

Another issue working against Paramedics Plus, according to Briscoe, was that its contract with the county included "significantly more stringent response time compliance standards" than the contract with AMR, including boosting the number of response time zones from five to 61. (Paramedics Plus is responsible for 911 ambulance transport in four zones, which are divided into several subareas—urban, suburban, wilderness—which have multiple response time criteria depending on the urgency of the call.) Though well-intentioned—the goal was to encourage more consistent response time performance county-wide—the change had unintended consequences, Briscoe says.

With some subareas having a call volume in the single digits, one late call could result in non-compliance for that zone, resulting in fines as high as $50,000.

During the 19 months leading up to October 2013, Paramedics Plus was fined $1.3 million for response time violations—even though the overall compliance on 194,000 calls was 97.9%. In September, for example, a Paramedics Plus unit arrived to a Charlie level call in a wilderness area with a response time of 28 minutes in 30 minutes, 21 seconds. Those two minutes and change cost Paramedics Plus $35,000.

To avoid penalizing Paramedics Plus in areas with low call volume where one late call can cause them to miss their targets, Alameda County will now measure compliance when the agency has responded to 100 calls in a subarea. Also, the number of zones/subarea measurements will be reduced from 61 to 48. "It should be noted that response time requirements are not changing; all response time requirements will be maintained at current levels," Briscoe wrote, noting that Paramedics Plus consistently meets or exceeds standards. Penalties for outlier calls will also be reduced as long as Paramedics Plus is hitting a 90% or better overall response time in that subarea.

The change in penalty structure should drop response time fines to about $200,000 in fiscal 2013–14, Feldhauser says. That, plus the higher fees and continued improvements in operational efficiencies, should help Paramedics Plus reach profitability by year four, Feldhauser says.

Paramedics Plus is a for-profit subsidiary of the nonprofit East Texas Medical Center in Tyler, Texas. The Alameda contract is Paramedic Plus's first in California. The contract runs from Nov. 1, 2011, through Oct. 31, 2016, with an option of a five-year extension.

To read Briscoe's recommendations, go to tinyurl.com/n22pvcl and choose the attachment under Agenda Item 1.

CARDIAC ARREST SURVIVAL HITS 57% IN SEATTLE

Seattle and King County, Wash., continue to raise the bar for sudden cardiac arrest response, with survival for witnessed cardiac arrest in which the patient had a shockable heart rhythm reaching 57% in 2012. The survival rate was 22% for all types of out-of-hospital cardiac arrest in which resuscitation was attempted, according to the Seattle and King County Division of Emergency Medical Services 2013 annual report, released Sept. 4, 2013.

In 2012, the King County EMS/Medic One system responded to 172,700 911 calls, including 48,010 for ALS. Of those, 1,134 were cardiac arrests in which resuscitation was attempted, including 983 who arrested before EMS arrived and 151 who arrested while EMS was on scene.

According to Seattle–King County statistics, patients with bystander-witnessed arrests due to underlying heart disease and with a rhythm of ventricular fibrillation had the greatest chances of survival. Males were more likely to survive to hospital discharge and were more likely to have heart disease as a cause of the arrest. Survivors' average age was considerably younger than non-survivors (58 compared to 65). Survivors were also somewhat more likely to receive bystander CPR. In half of cases in which bystanders initiated chest compressions, they had received instructions from 911 dispatchers.

Rapid defibrillation is a key element of SCA survival, but awareness was low among the public, as many people didn't realize they needed to register their AEDs per state law so dispatchers could locate the nearest device. To increase awareness, the King County EMS/Medic One system launched Shockingly Simple–Restart a Heart Campaign, which led to 256 new AEDs being registered.

Read the full report at tinyurl.com/3tw389d (under the "What's New at King County EMS" banner toward the bottom of the page). BP

— Jenifer Goodwin

Q&A

WITH ALEXANDER GARZA, M.D., M.P.H.

Former chief medical officer/assistant secretary for health affairs, U.S. Department of Homeland Security

The U.S. Centers for Disease Control and Prevention (CDC) tracks viruses that could become pandemics while the Department of Health and Human Services takes the lead on vaccines. But pandemics don't only have the potential to make people sick. If they're bad enough, pandemics could compromise the nation's security, which is what the U.S. Department of Homeland Security's (DHS) Office of Health Affairs aims to prevent.

As the former DHS chief medical officer/assistant secretary for health affairs, Alex Garza, M.D., M.P.H., led a team that monitored these emerging health threats and analyzed what a severe pandemic might mean to national security, such as preventing workers at power plants or telecommunications sites, or even police and EMS responders, from showing up to work. "We looked at where our vulnerabilities are and what measures we should take to protect the population," Garza says, whose team also analyzed other potentially destabilizing scenarios, such as a terrorist strike involving chemical, radiological, biological or nuclear weapons.

After graduating from the University of Missouri, Kansas City, Garza worked as an EMT and later a paramedic for the Metropolitan Ambulance Services Trust in Kansas City before going to medical school at the University of Missouri, Columbia. While an emergency medicine resident in 1997, he joined the U.S. Army Reserves and served as a battalion surgeon and public health team chief. He deployed to Iraq in 2003 and was awarded the Bronze Star and a Combat Action Badge.

From 1999 through 2006, Garza was associate medical director and then medical director for EMS in Kansas City. He spent a year in New Mexico as the state director of EMS before becoming director of military programs at the ER One Institute at the Washington Hospital Center in Washington, D.C. In April 2009, President Obama appointed Garza to the assistant secretary position. During his four years in Washington, Garza was an adviser to former DHS Secretary Janet Napolitano.

Ready to return to his native St. Louis with his wife and three sons, Garza left D.C. in April to become associate dean for public health practice and an associate professor of epidemiology at the St. Louis University College of Public Health and Social Justice. He is also medical director and homeland security adviser for FirstWatch, which provides near real-time monitoring of CAD and EMS data for a range of purposes, including biosurveillance and operational and clinical quality improvement.

Garza spoke with Best Practices *about his years in the federal government and the important role that CAD and EMS data can play in monitoring threats to U.S. health and safety and improving overall patient care.*

Q Why does DHS need a chief medical officer?

DHS has 240,000 employees and is the third largest federal department in the U.S. government. Upward of 70% of our workforce is involved in operational tasks, such as guarding the borders, patrolling the coastline and doing drug interdictions, so there are a lot of health issues involving the workforce that come up.

We also have 3,500 EMTs and paramedics who work within DHS. We don't do transport EMS services and we're not providing EMS to a city or a community, but we do have medics as part of a lot of our teams. Customs and Border Protection has EMTs to assist with health issues that come up when you are tracking down people crossing the border in the middle of the desert. We have specialized medics who do search and rescue missions. The Coast Guard has corpsmen. There are tactical medics who work with the Secret Service. So the internal things can be making sure we have policies and procedures in place that protect our workforce, to simple things like making sure licensing is up to date.

There's also an external role for a chief medical officer. When it comes to protecting the health of the American public, some of that is done by Health and Human Services, specifically the assistant secretary for preparedness and response, who is in charge of the national disaster medical system, while the CDC does disease tracking. At DHS, we're not so much focused on the delivery of healthcare; what we're really focused on is how a health issue can affect the security of the United States. A pandemic, for instance, could have a socio-economic impact that could destabilize the government. So we look at what measures we should take to protect the population.

One of our programs is BioWatch, an environmental sensing system for biological organisms. We sample the air in multiple cities around the country, take samples back to the lab and run tests to make sure there is nothing in the environment that shouldn't be there. A biological attack would likely be a covert attack; the only way you can figure out what happened is through environmental sensing or when people show up in the hospital sick. We think it's better to find out before people start getting really sick.

> "EMS is at a point where it can decide if it wants to be a grownup or stay a teenager."
>
> — *Alex Garza, M.D.*

Q At the 2012 Public Health Preparedness Summit, you were part of a panel discussion about pandemics that included the screenwriter for the movie *Contagion*, in which a rapidly spreading virus wipes out large swaths of the world's population. How farfetched is that idea?

It's difficult to predict, as we've never seen a virus like that. In 1918, the so-called Spanish flu was as close as we've gotten. Is it possible? I don't think it's out of the question, but the risk of it happening is not huge because viruses usually don't mutate to become that transmissible or lethal. But virologists will say it is possible.

But even a less lethal virus could have a significant impact. Influenza circulates around the world and is constantly changing. It can spread rapidly and become a pandemic if you get the right genetic re-assortment. The two big ones we're keeping an eye on now are the Middle East Respiratory Syndrome (MERS) coronavirus and the avian influenzas coming out of southeast Asia. The most recent one is H7N9, an avian influenza with a high mortality rate that was circulating around China earlier this year. They culled their duck and wild bird population to cut off the chain of transmission. Some of the preventive measures we take is making sure nobody is importing birds from southeast Asia. There's a smuggling operation that Customs and Border Protection tries to stop.

Q Has there ever been a pandemic that has risen to the level of threatening security?

The short answer is no. A lot of what we worked on at DHS are *what if?* scenarios. We think about what would occur if a terrorist organization had the capability of developing various conventional, chemical, biological or radiological weapons. Then we develop a risk profile for the United States, and we develop plans and policies to protect the American people and mitigate the risk.

The closest we've come is the 1918 pandemic, which started in Kansas, spread rapidly and was very lethal. We certainly have better medical care now, so how that would correlate to what would happen today isn't certain. But certainly it would have an effect on society.

You would see a lot of the same things we saw with H1N1 but to another degree. There were some folks advocating closing schools, canceling public events, quarantining folks who were exposed, limiting travel to unexposed areas, all things that happened in 1918.

Q How worried should we be about the MERS coronavirus?

It's concerning. At least from what we understand, MERS has a substantial mortality rate. All of those things put together make it something you should have on your radar screen.

While there are case reports of it transmitting from person to person, on the plus side, it seems like you have to have significant exposure to catch it. There hasn't yet been sustained person to person transmission. But viruses are notorious for genetic rearrangement, so we have to keep an eye on it. For EMS and 911 centers, what that translates to is making sure we are keeping good track of our data and being aware if you see an uptick in respiratory illnesses or an illness that is not easily explained. EMS providers also need to be aware of what is going on globally. We live in a global culture; if your patient has a respiratory illness and has been to the Hajj in Mecca, you might want to put a mask on.

A virus that has high transmissibility and high lethality can destabilize the security of the country, which is why the Department of Defense has their own vaccine stockpile so they don't have to compete with everybody else for a vaccine.

Q Other than being aware of global health issues, what can an EMS agency do to be prepared?

By using FirstWatch to monitor CAD data, you can look for complaints in the community and compare them against a historical average. It's similar to what traditional epidemiologists do when they look for flu-like illness in emergency departments and clinics. But when the CDC puts out its data, it's usually lab confirmed and it's two weeks later.

With CAD data, you can look for people who call 911 with respiratory complaints analogous to the flu and plot that against historical data. It could serve as an early marker of flu in the community.

Q You're an advocate for the importance of data collection in EMS, particularly transforming data into actionable information. Why is this particularly important now?

It's important for a few reasons. The Affordable Care Act is changing the landscape of healthcare, including expecting providers to show they are improving quality and spending less. The only way you can demonstrate quality is through data. In the analysis of data, there's a saying: Garbage in, garbage out. If you give me bad data, you'll get bad analysis and it will lead to bad decisions. So it all leads back to the quality of data. If you can capture quality data in a timely manner and analyze it to see where your challenges are or to show people you are doing a good job, you can either fix your issues or show why you should be paid more.

EMS is at a point where it can decide if it wants to be a grownup or stay a teenager. When I was a medic, EMS was, Hey, we like running lights and sirens. Doing exciting things, taking care of critical patients—that's great. We still need that. But in order for EMS to really move into this new healthcare paradigm, you have to do more than that. You have to provide quality of care, show the medical commu-

Continued on page 10

Continued from front page

HOW THE PROJECT CAME ABOUT

The Culture of Safety document emerged out of a 2009 recommendation from the National EMS Advisory Council, which determined that although there were individual EMS agencies and groups working on improving various aspects of safety, there was no overarching strategy that defined the problem or a global approach to improving it. The National Highway Traffic Safety Administration's (NHTSA's) Office of EMS, with support from the Health Resources and Services Administration's EMS for Children program, awarded a grant to ACEP to develop such a strategy.

Read the Culture of Safety report at tinyurl.com/mxwdno2.

ACEP sought the participation of key EMS organizations and other stakeholders. The steering committee eventually included representatives from 23 organizations, including the National EMS Management Association (NEMSMA), the National Association of State EMS Officials, the National Association of Emergency Medical Technicians (NAEMT), the National Volunteer Fire Council and the International Association of Fire Fighters.

"They did a good job of identifying all the people who needed to be at the table," says steering committee member Glenn Luedtke, a paramedic for nearly 40 years and former chair of the NAEMT EMT Safety Course Committee. "We had to address dozens of different system designs, from all-volunteer to career, fire, private and third-service, and they all have their own variations. We needed to make the point that we are all in this together. Your organizational structure may be different, but there are common dangers that if you don't pay attention to can hurt you or kill you."

No one would suggest that anyone could make EMS 100% risk-free. EMS providers work under unpredictable circumstances, at odd hours, with limited information, assistance, supervision and resources in the field. During a shift, EMTs and medics can be exposed to risks ranging from infectious diseases to stress, fatigue and violence.

During his 36 years as a volunteer firefighter-EMT in northern Kentucky, Ken Knipper, a steering committee member and National Volunteer Fire Council Executive Committee member, had a gun pointed at him twice. During one incident, two neighbors were fighting. When he drove up, one of the people came running out of her house, yelling and waving a gun. "We never had a chance to get out of the ambulance," he says. "We were trying to talk her into putting down the gun while we waited for police cruisers to pull up."

Another time, a family called 911 for help with a relative having a mental health crisis. "We walked into the house and we should have known something was up because all the people who lived there were standing outside," Knipper says. "We walked in, turned left, and he was sitting in the bathroom with a gun pointed right at us."

Both incidents ended without injury, but they easily could have gone the other way, Knipper says. At the time, responders had no training in how to avoid those situations or handle them if they occurred. "If this document can raise awareness and save a couple of lives, then it will be very well worth it," he says.

While workforce safety is a major concern, so are risks to patients and the public, whether it's from unsafe driving or poor vehicle designs, medical errors or protocol lapses, notes Chris Shimer, a steering committee member and retired chief of the Howard County Department of Fire & Rescue in Columbia, Md. Though limited reporting requirements and privacy laws make determining the scope of safety issues hard to measure, one of the strengths of the Culture of Safety document is that it looks at safety for all of those potentially impacted.

"We're not only interested in the safety of our own people—it's also about preventing medical errors and protocol errors," says Shimer. "It's about all the people we touch, whether it's the patient or the public."

ELEMENTS OF EMS SAFETY CULTURE

As the document took shape, six core elements that constitute an EMS culture of safety emerged. One is "Just Culture," a non-proprietary strategy to prevent and learn from mishaps and mistakes that's already in use by other high-stakes industries such as hospitals and airlines.

The typical way many organizations deal with mistakes is to focus on the outcome and punishment—that is, a bad outcome is punished harshly while a mistake that resulted in no harm is basically brushed aside since there were no obvious consequences. Instead of emphasizing outcomes, Just Culture focuses on the systems and behaviors that led to the mistake. It's based on the understanding that human beings, no matter how well-intentioned, are not machines—they will, inevitably, make a mistake at some point. Instead of being punitive, organizations that practice Just Culture put systems of checks and balances in place to avoid errors as much as possible. When errors do occur, employees are encouraged to report them, as well as near-misses, to improve processes without fear of reprisal. Instead of hiding mistakes, transparency enables the individual and the organization to learn from errors and make changes to avoid them in the future.

In the Just Culture philosophy, people are still held accountable for things like reckless behavior, but they are not punished for inadvertent errors. The emphasis is on fixing the behavior rather than assigning blame. "Just Culture is one example of a safety management program that could be used," Murray says. "If I'm the medic who backed up without a spotter or drove too fast and I think I'm going to get punished, I'm not going to want to admit it. Fear of punishment has been proven not to be an effective [contributor to] safety."

Other elements of a culture of safety include:

- **Coordinated support and resources** Advancing EMS safety industry-wide will require the support, guidance and resource-sharing from a broad spectrum of stakeholders. Establishing an EMS safety resource center could facilitate this. The resource center would not have regulatory or enforcement authority, but it could monitor progress and facilitate information-sharing. The resource center would not replace other initiatives, but would supplement and support them.
- **EMS safety data system** A lack of complete or centralized data to analyze the scope of EMS responder injuries, adverse medical events and adverse events involving the community hinders efforts to address these issues. An EMS safety data system, the authors wrote, would serve as a "national, robust, well-designed, secure data system linking and communicating with existing data systems to encompass key information about EMS safety." The system would be accessible to researchers, policy-makers, stakeholder organizations and EMS agencies.
- **EMS education initiatives** A culture of safety must be fully integrated into each component of EMS education—not as an afterthought or chapter in a textbook.
- **EMS safety standards** EMS should adopt evidence-based or consensus-based standards that promote safety from an operational, technical and cultural perspective.
- **Requirements for reporting and investigation** Mandating reporting of important safety-related information is needed to make the national EMS safety data system effective. Steps to achieve this include determining what information is useful and what data is already available or mandated. This could include adding new data points to the National EMS Information System.

> While not a "how-to" manual for handling specific situations, the Culture of Safety document is intended to serve as a national framework, defining the scope of the problem and the core elements that a comprehensive safety strategy would encompass.

"There are pockets of data," Murray says. "There have been small studies done on patient safety, and ambulance crash data is available from various sources at the state level and at NHTSA, but there is nothing to connect the dots. There is no organized way to collect it and compare it across the country, and to determine if a safety issue is unique to Texas, or California, or is happening in every state."

Though EMS has certain unique attributes, it also faces similar safety issues as other professions—firefighters, hospital staff and even FedEx or UPS personnel included. Forty years ago, "America Burning," a report written by the National Commission on Fire Prevention and Control, detailed the startling high death rate from fires among the public and firefighters and made recommendations for staunching the losses through better fire prevention and firefighter training. In the decades after the report, changes such as improved building codes and public education campaigns around fire prevention are widely considered to be one of the nation's greatest public health successes—and have helped make firefighting a safer job than it once was.

Yet the fire service didn't stop with the 1973 document. Concerned that there were still about 100 line-of-duty deaths annually and 10,000 serious injuries, in March 2004, the National Fallen Firefighters Foundation launched the 16 Firefighter Life Safety Initiatives, also called "Everyone Goes Home." The initiatives included improving safety through better training, accountability, risk management, physical fitness—and, yes, cultural change.

Like EMS, the fire service also has to grapple with workforce attitudes that a high level of risk and injury are acceptable. "The concept of organizational cultural change may not come easily to many firefighters who are not only resistant to change but who may perceive it as an esoteric 'management flavor of the month' or an attack on fire service traditions. Most challenging for those who advocate for the safety culture change, however, is its unavoidable collision with the fire department's heroic identity," says a white paper describing the cultural change initiative. "Those who understand that fundamental changes in attitudes and beliefs must occur if line-of-duty deaths (and by extension, serious line-of-duty injuries) are to be reduced must answer the questions, How (or can) the fire department create a new safety culture and still be the fire department? And, Can we be safe and courageous at the same time?"

ADDRESSING PATIENT SAFETY

When it comes to hospitals, what EMS has in common is, of course, patient care. In 1999, the Institute of Medicine released "To Err is Human: Building a Safer Health System," which crystallized the problem of preventable medical errors in hospitals. The report was a landmark in patient safety literature and jumpstarted public and professional debate, according to a 2005 article describing the impact of the report by two of its authors that was published in the *Journal of the American*

Continued on page 11

Garza interview, continued from page 7

nity you are serious when you talk about taking care of patients, and show you can do a good job. EMS as a profession really needs to embrace the idea of being able to document that it can provide quality care.

Q Why is it so challenging for agencies to make meaning of their data?

Part of it is the immaturity of the industry. For a long time, EMS was not held to the same standard as the rest of the medical community for the amount and quality of data they were expected to collect. But if EMS personnel want to be respected by the medical community, part of that is showing value. The other side of that is we don't really want to fill out these ambulance care forms or be held to collecting reliable data. You can't have it both ways. If you want to be respected, you have to show you're doing a good job.

EMS agencies are starting to realize this and are taking data collection more seriously. EMS has been somewhat forward-thinking in this with the development of NEMSIS.

Another factor is the rest of the medical community hasn't told EMS what it thinks is important. In certain parts of the medical world, you have measurable metrics. For hospitals to get reimbursed by Medicare for STEMI patients, they need to show that patients who come to the ER get aspirin and ECGs, and door to balloon time is measured. EMS can also give aspirin and do ECGs, but they're not being measured. We measure door to balloon time, but the time we should be concerned about is the time from injury to the time the artery gets opened. EMS plays a part in that.

Q FirstPass is a new offering from FirstWatch that's getting buzz from the EMS medical director community. Why is that?

What FirstPass offers is the ability to review clinical work done by EMS providers in a timely and efficient manner. When I was a medical director, we did most things by hand. The quality improvement manager's job was to pull reports for whatever the medical director wanted to look at and present it. But those statistics were usually at least a month old.

The benefits of FirstPass are that it pulls the data electronically, soon after it's been submitted, and puts it through an algorithm to see that the proper steps were taken. What was a very time-consuming and cumbersome process is streamlined and done almost automatically. A medical director can see what's going on in near real-time and make adjustments as needed and present that information to supervisors and providers while it's fresh in their minds. For example, with a STEMI patient, you might look to see if the patient got an ECG and how quickly, or aspirin, or how long it took on scene and to transport to the hospital.

Q What are the challenges in monitoring every call?

The challenges are that there are nuances in every call. For example, with the STEMI patient, if somebody didn't give aspirin because the patient had already taken aspirin, then it gets kicked out that the responders didn't fulfill that requirement even though there's a good reason for it.

Other clinical conditions don't easily fit into an algorithm, such as cardiac arrest. In the midst of resuscitation of a cardiac arrest, there are so many different things going on that make it tough to interrogate the record to any degree of specificity. Cardiac arrest will always take a person to look through that record, which is important to do because it's a high consequence call.

For low acuity calls, there isn't as much impact and not as much payoff in monitoring it. If somebody calls 911 for a sprained ankle, other than an analysis of pain reduction and vital signs, there isn't a whole lot else there. You want to choose interventions to monitor that have impact, and you want your quality improvement folks to focus on those things. Those things include cardiac arrest, STEMI, stroke, trauma, pain reduction, diabetes/hypoglycemia, seizures, narcotic overdose, and you could argue for respiratory issues, such as asthma or COPD. For asthma or COPD, you could measure peak expiratory flow rate and show that the patient had improved by the time they got to the ED. For these types of calls, you want to focus on gathering good data and documenting that you had an improvement in patient condition, or at least that you met the standard of care.

Q What surprised you about your experience in Washington?

One was the amount of information you need to consume daily in order to be effective. When you're a clinician, you take care of patients and dabble in some administrative stuff. But in a political appointee position, you have to be invested in a lot of procedural things in the government, such as the budget process.

You also have to think about how you message what you're doing in your office to multiple audiences—to the DHS (your boss), the White House, the congressional staff, the Office of Management and Budget. Each is a different customer, and with the OMB in particular you have to make sure you can explain why your office is a good investment.

Q Any President Obama stories to relate?

I've only met with the president a couple of times. There is a notion that if you're appointed by him you go golfing with him, but that doesn't happen.

The only story that jumps out in my mind is when I was in my office two months, I was summoned by the DHS chief of staff to go to the White House to be there with Secretary Napolitano to brief the president in the situation room on how H1N1 preparations were going. I was waiting to go in, and out of the corner of my eye I saw this tall figure walk down the hall. It was so uneventful I didn't realize it was the president. I shouldn't have been shocked—it was his house. The president is just like you see him in interviews: very calm, cool, collected. He asked pointed questions, very deliberatively. BP

— Jenifer Goodwin

Quality management, continued from page 3

***Endurance: Shackleton's Incredible Voyage* by Alfred Lansing**
This page-turner is a true story of polar exploration and survival. The leadership example set by Shackleton will inspire you, as the teamwork that his leadership produces resulted in one of the most remarkable survival stories ever written.

ORGANIZATIONS
The Institute for Healthcare Improvement is the gold standard for leadership and performance improvement in hospitals worldwide. You can spend weeks unpacking the information on their website: ihi.org. Here are a few highlights:

- IHI's Open School provides the opportunity to learn about the science of improvement online with colleagues from all over the world.
- Held every year, IHI's National Forum hosts thousands of healthcare leaders including hospital CEOs, deans of medical schools, presidents of all the colleges of medicine like ACEP, major insurers, representatives from more than 40 countries, and a small handful of EMS leaders, all of whom gather to learn about and create massive improvement in healthcare worldwide.
- IHI's Improvement Advisor Course is a one-year course that is the equivalent of a master's degree in the science of improvement. So far only a few EMS folks have completed the program, including consultant Joe Penner; Sheri Lambeth and Jonathan Studnick, Ph.D., from MEDIC in Charlotte, N.C.; Dave Williams, Ph.D.; and yours truly.

The Agency for Healthcare Research and Quality has a website that's jampacked with resources and information: ahrq.gov. You can sign up for their free Research Activities Newsletter, a great resource for what's happening in all areas of healthcare quality, at tinyurl.com/mv6x997.

JOURNALS
American Journal of Medical Quality: ajm.sagepub.com/content/current.
Journal for Healthcare Quality: tinyurl.com/6d7x9e9.

COLLEGES
The strongest program in quality improvement is the Deming Scholars MBA at the Fordham Graduate School of Business in New York. Visit tinyurl.com/mj8ebes.

For EMS graduate education, I recommend the Emergency Health Services program at the University of Maryland Baltimore County. (In the spirit of full disclosure, I teach here.) For information, visit tinyurl.com/m8ja4ky.

AWARD PROGRAMS
The Baldrige Performance Excellence Program is the nation's highest award for performance improvement/excellence: nist.gov/baldrige/. Most states have a state level version of this award; EMS systems in Florida, Oklahoma and California have been winners of state level awards.

PUBLISH YOUR WORK
One of the hallmarks of a true profession and a true professional is a growing body of knowledge. In medicine, research is published in peer-reviewed journals based on standards. Quality improvement projects can also be published in peer-reviewed journals as long as they follow the Standards for Quality Improvement Reporting Excellence (SQUIRE) guidelines. Visit squire-statement.org/guidelines for information.

There are many more resources that were not included in this article. If you'd like help learning about specific things in leadership or quality management, I'm happy to suggest resources. Drop me an e-mail at mtaigman@gmail.com. BP

Mike Taigman is the general manager for AMR's Ventura County and Gold Coast operations. He's also part of the national leadership team for Caring for Maria, AMR's national performance improvement collaborative.

Continued from page 9

Medical Association.

"While To Err Is Human has not yet succeeded in creating comprehensive, nationwide improvements, it has made a profound impact on attitudes and organizations. First, it has changed the way health care professionals think and talk about medical errors and injury, with few left doubting that preventable medical injuries are a serious problem," they wrote.

And the second major effect? Raising awareness and getting a wide range of stakeholders interested and committed to improving patient safety.

If the Culture of Safety document can do the same for EMS by raising awareness about safety for patients and providers alike, the project will have been a huge success, steering committee members say. "Awareness is 99% of the battle," Luedtke says. "Folks just aren't aware this is an inherently unsafe profession. They get hurt doing this, yet a lot of it is preventable."

Still, there are thorny questions, including that if the reporting of errors is mandatory, what should be done with the information? Where should it be housed, and who should have access to it? There's also the question of next steps. Some feel that subsequent efforts need to be more specific, going beyond a broad strategy and providing a toolkit that EMS agencies can use to make real-life improvements.

Although the document is strategic in nature and written for high-level leadership, it contains information that local EMS agencies will find valuable, says Skip Kirkwood, past president of NEMSMA and director of EMS in Durham County, N.C. "There will be places where it will become one of those binders that sit on the shelf and collect dust," Kirkwood says. "On the other hand, there will be places that will take it to heart and use it as a basis for doing good stuff."

And in providing a national framework for change, the Culture of Safety document will help to move the process along in a more coordinated, collaborative way than it would otherwise occur. "It's going to take a lot of time to change culture, but now we have some guidance," Knipper says. BP

FINDING SUCCESS IN THE NEW YEAR

By John Becknell

An old one-liner says, "My New Year's resolution is to break my New Year's resolutions—that way I can succeed at something."

Many of us are skeptical about attributing any significance to the New Year in terms of promises for change. But it can be a convenient marker in time to reflect and ask tough questions about where you're going. Here are three important questions to ponder as you consider the 12 months ahead.

QUESTION 1: ARE YOU COUNTING WHAT REALLY COUNTS?

The quality movement taught us that improvement comes when we pay attention to what counts. Many have translated that lesson into giving attention to what is *easiest* to count. We count response times, skill success, protocol compliance, errors and dollars. But when we look closely at the best organizations—those consistently loved by customers and employees—we find that it is culture that really counts.

Customer service, quality, safety, productivity, employee commitment and profitability all improve when we create cultures in which employees feel important, appreciated, understood and cared about. We create such a culture by listening deeply to employees and customers and addressing what they tell us needs to change.

QUESTION 2: ARE YOU REALLY WILLING TO GROW AND CHANGE?

When I ask leaders this question they easily say, "Of course, sure, bring it on." But they rarely mean it. This industry is so notoriously resistant to change that we joke about it. This resistance often shows up in leaders' fear of talking openly about their own leadership shortcomings and the weaknesses in their organization.

It's easy to stick the chest out and boast about how great things are, but I'm finding it takes special courage for a leader to speak candidly about, and work on, what needs to change in their personal leadership journey and in their organization. While rare, it is always refreshing to be around such leaders—they are the ones people are more willing to follow.

As 2014 unfolds, it's worth remembering Darwin's lesson that it's not the strongest who survive, nor the most intelligent, but those who are most responsive and willing to change.

QUESTION 3: DO YOU HAVE ENOUGH CAPACITY IN YOUR LEADERSHIP TEAM TO MAKE LASTING CHANGE?

You may have enough capacity to fill a schedule, keep trucks on the road and accommodate service growth, but does your team really have the time and energy to lead important change? Remember, leading change that sticks and has broad support is about influencing others. Influencing others—especially the newer generations—demands building and nurturing relationships, telling and retelling powerful stories and listening deeply for ideas and clues about resistance.

All of this takes a lot of time. Too many EMS leadership teams simply lack the capacity to lead change and don't believe they have the budget to add more. Make 2014 a year of working on finding the resources to expand the capacity of your leadership team. Just imagine what might happen if you had a little more time to actually lead and not just manage.

The irascible 1950s secretary of state, John Foster Dulles, once said, "The measure of success is not whether you have a tough problem to deal with, but whether it is the same problem you had last year."

Consider this New Year a gift of 365 more days to create some success. I wish you the best.

John Becknell, Ph.D., is the founding publisher of Best Practices. *He is a consultant, co-director of the EMS Leadership Academy and a partner at SafeTech Solutions, LLP (safetechsolutions.us).*