ED MANAGEMENT®

BEST PRACTICES, PATIENT FLOW, FEDERAL REGULATIONS, COST SAVINGS, ACCREDITATION

INSIDE

AHC Media

MARCH 2015 Vol. 27, No. 3; p. 25-36

With flu numbers among staff increasing, hospitals report challenges, need for vigilance

With a less-effective vaccine, health officials say children and the chronically ill are more vulnerable to the virus

With this year's flu vaccine much less effective than hoped, with a migration of the predominant strain from the predicted strain, EDs in some regions are getting slammed with patients

EXECUTIVE SUMMARY

With a flu vaccine that is largely missing the mark, EDs around the country have their hands full with patients complaining of flu-like symptoms. The flu arrived earlier this year than usual, and by mid-January, it was still not clear whether the virus had peaked. Many EDs are struggling with staffing challenges as more personnel than usual are missing work because they have come down with the flu themselves. As a result, hospital administrators are stepping up infection control practices and urging vigilance with respect to hand hygiene and wearing masks.

- By mid-January, the Influenza Hospitalization Surveillance Network reported that there had been more than 9,900 hospitalizations related to laboratory-confirmed cases of flu since October 1, translating to an overall rate of more than 36 hospitalizations per 100,000 people.
- This season's predominant H3N2 viruses have been particularly hard on children, with the CDC reporting that more than 56 children had died from the flu by mid-January.
- Hospital administrators also report that chronically ill patients are particularly vulnerable to the flu. In some cases, these patients are straining hospital resources as they often require higher-level, inpatient care.

Financial Disclosure: Author **Dorothy Brooks**, Managing Editor **Leslie Hamlin**, Executive Editor **Shelly Morrow Mark**, and Nurse Planner **Diana S. Contino** report no consultant, stockholder, speaker's bureau, research, or other financial relationships with companies having ties to this field of study. Executive Editor **James J. Augustine** discloses he is a stockholder in EMP Holdings. **Caral Edelberg**, guest columnist, discloses that she is a stockholder in Edelberg Compliance Associates.

ED MANAGEMENT®

ED Management®,
ISSN 1044-9167, is published monthly by
AHC Media, LLC
One Atlanta Plaza
950 East Paces Ferry Road NE, Suite 2850
Atlanta, GA 30326.
Periodicals Postage Paid at Atlanta, GA 30304 and at additional mailing offices.

POSTMASTER: Send address changes to:
ED Management®
P.O. Box 550669
Atlanta, GA 30355.

SUBSCRIBER INFORMATION:
Customer Service: (800) 688-2421.
customerservice@ahcmedia.com.
www.ahcmedia.com
Hours of operation: 8:30 a.m.-6 p.m. Monday-Thursday; 8:30 a.m.-4:30 p.m. Friday, EST

EDITORIAL E-MAIL ADDRESS:
leslie.hamlin@ahcmedia.com.

SUBSCRIPTION PRICES:
Print: U.S.A., 1 year with free *AMA PRA Category 1 Credits™*: $519. Add $19.99 for shipping & handling.
Online only: 1 year (Single user) with free *AMA PRA Category 1 Credits™*: $469
Outside U.S., add $30 per year, total prepaid in U.S. funds

MULTIPLE COPIES: Discounts are available for group subscriptions, multiple copies, site-licenses or electronic distribution. For pricing information, call Tria Kreutzer at 404-262-5482. Canada: $529 per year plus GST. Elsewhere: $529 per year.

Back issues: $82. Missing issues will be fulfilled by customer service free of charge when contacted within one month of the missing issue's date.
GST Registration Number: R128870672.

ACCREDITATION: AHC Media, LLC is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

This activity has been approved for 1.04 nursing contact hours for each issue and a maximum of 12.48 hours annually. Provider approved by the California Board of Registered Nursing, Provider #14749, for 12.48 Contact Hours.

AHC Media, LLC is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

AHC Media, LLC designates this enduring material for 1.25 *AMA PRA Category 1 Credits™* per issue and a maximum of 15 *AMA PRA Category 1 Credits™* annually.

Physicians should claim only credit commensurate with the extent of their participation in the activity.

Approved by the American College of Emergency Physicians for a maximum of 15.00 hour(s) of ACEP Category I credit.

This activity is intended for emergency physicians, ED nurses, and other clinicians. It is in effect for 24 months from the date of the publication.

Opinions expressed are not necessarily those of this publication, the executive editor, or the editorial board. Mention of products or services does not constitute endorsement. Clinical, legal, tax, and other comments are offered for general guidance only; professional counsel should be sought in specific situations.

EDITOR: Dorothy Brooks (dobr@bellsouth.net).
MANAGING EDITOR: Leslie Hamlin (leslie.hamlin@ahcmedia.com)
EXECUTIVE EDITOR: Shelly Morrow Mark (shelly.mark@ahcmedia.com)
CONTINUING EDUCATION & EDITORIAL DIRECTOR: Lee Landenberger (lee.landenberger@ahcmedia.com)

presenting with flu-like symptoms. Further, even hospitals with mandatory flu vaccination policies are having to scramble to cover the shifts of emergency personnel out sick with one of this year's vaccine-resistant strains.

While the flu arrived as early as October in some areas, by mid-January, flu activity was widespread in most states, according to the Centers for Disease Control and Prevention (CDC) in Atlanta, GA. Further, the Influenza Hospitalization Surveillance Network reports that there have been more than 9,900 hospitalizations related to laboratory-confirmed cases of flu since October 1, translating to an overall rate of more than 36 hospitalizations per 100,000 people.

Perhaps most concerning, this season's predominant H3N2 viruses have been particularly hard on children. Illness severity related to the flu was climbing sharply in mid-January with 11 flu-related pediatric deaths reported to the CDC during the week ending January 17. Thus far this season, a total of 56 pediatric deaths related to the flu have been reported, and it is still not clear whether the season has yet peaked.

Bolster resources

Hospitals in Michigan report that chronically ill patients are another segment of the population that has been particularly vulnerable to this year's influenza. "We are seeing an uptick in the number of patients who are getting the flu who are chronic diabetics, are in renal failure, have chronic liver issues, or heart failure," explains **Joyce Farrer**, RN, MSN, the administrator of emergency medicine in the Henry Ford Health System in Detroit, MI. "So we are seeing a large increase in the number of patients we are admitting to medical intensive care from the ED."

Farrer notes that the only patients being tested for the flu at Henry Ford Hospital are those who require antiviral medication and admission. She estimates that number at about 15 patients per day, or 7% of the daily volume in the ED. This influx, coupled with the fact that ED personnel themselves are coming down with the flu, has presented challenges. (Also see, "Despite positive new research findings, use of antiviral meds against the flu remains controversial," p. 28.)

"I have anywhere from two to three staff [members] a day who are off sick, so now we have to staff up for the [added] volume and we also have to staff up to cover those staff members who are sick and at home with the flu themselves," observes Farrer. "Every day we are adding additional staff, and this has taxed inpatient [resources], too. Usually around the holidays we have been able to shut down some units, at least for a short period of time, and give additional staff time off. We were unable to do that this year. We had to keep every bed open because the ED volume was high and our demand for beds was way up."

The typical volume at Henry Ford Hospital is 260-270 patients a day, with about 22% of those patients requiring admission, but the flu has driven the admission rate up to 26%, explains Farrer. "Also, a lot of these patients are requiring a higher level of care because they have all these comorbidities," she says. "The risk to the patients and the severity of their illness is much higher."

Usually on Christmas or New Year's day, the hospital will see around 100-150 patients in the ED, notes Farrer. "However, this

past Christmas we saw 210 patients, and on New Year's day we saw 222 patients," she says. "We also saw a big uptick in our volumes on the day after [each of these] holidays."

Prioritize infection control

Even before it became clear that this year's flu vaccine was not a perfect match for the predominant strains in circulation, the hospital began efforts to limit transmission of the flu, explains Farrer. As early as September, the hospital's infection control committee began posting signs that instruct patients and visitors to let emergency staff know immediately if they have any signs or symptoms of the flu. "We spell it out for them; the signs and symptoms are pretty simple," she says. "These signs are posted at all the hospital entrances."

In addition, a triage nurse who is stationed up front collects additional information. "We will immediately put a mask on [suspected flu] patients if they have not already done so themselves," notes Farrer. She adds that emergency staff are also routinely queried about whether they have a fever or a cough, and they are continually reminded to wash their hands. (Also see: "Use mystery observers, staff input to boost hand-washing compliance," p. 29)

With the volume of new flu cases coming into the ED, it is still not clear whether the flu season has peaked, but Farrer is hopeful that the worst of the season is behind Detroit. "We have eight EDs [in the Henry Ford Health System], four of which are hospital-based and four of which are non-hospital-based, and they are all packed," she says. "We are very busy."

Wear masks for extra protection

Wendy Gelbard, MD, the associate chair of clinical operations in the ED at the University of Rochester Medical Center (URMC) in Rochester, NY, needs no further evidence that this year's flu vaccine is not a good match for the virus strains that are now circulating. She is among several ED staff members who have come down with the flu this season, a factor that has made dealing with the surge in influenza cases to this busy medical center more challenging than is usually the case. In fact, when *ED Management* caught up with Gelbard to discuss this year's flu, she was home sick herself, still recovering from the virus.

"Our hospital is well above capacity, and it is worse this year than I can recall in years past," says Gelbard. "The hospital is so full that we have more inpatients boarding in the ED because there are more inpatients in the hospital, and they are not leaving as fast as we admit them, so we have had to staff up."

Gelbard notes that hospital administrators have helped the ED cope with the influx with more resources and personnel. "We have opened up alternative care areas where we are trying to provide care in areas that would not be considered conventional inpatient units," she explains.

When a patient presents to URMC with symptoms that are suggestive of the flu, ED staff try to isolate him or her until the diagnosis is confirmed, explains Gelbard. "Handwashing and all the usual infection prevention methods are present and being pushed in the department," she says. "Staff have to be vaccinated for the flu or, if not, wear a mask, but this year, because the vaccine has not been that effective, staff are voluntarily wearing masks in their areas," notes Gelbard.

The ED at URMC first started seeing cases of the flu in November, but the surge became more serious the following month, says Gelbard. "In December, 40% of the flu swabs we sent [for testing] were coming back positive, so that is pretty high," she says.

By mid-January, the percentage of flu swabs coming back positive was down to 20%, but it still wasn't clear whether the decrease was going to be sustained.

Prepare for staffing challenges

The ED at Vanderbilt University Medical Center (VUMC) in Nashville, TN, has also seen more employees come down with the flu this year than is typically the case, but the number of patients presenting with symptoms of flu is in line with what providers are accustomed to seeing this time of year.

"For the month of December, we submitted roughly 1900 [flu swabs] for testing … and of those about 14% came back positive," explains **Emily McBride**, MSN, RN, manager of the adult ED at VUMC.

When compared to the last two flu seasons, the numbers are slightly elevated, but not overwhelming, notes McBride. Further, unlike what emergency providers at Henry Ford Hospital and URMC are experiencing, flu patients who are presenting to the ED at VUMC this year don't seem to be quite as ill as they have in recent years. "I don't feel like we are admitting quite as many people as we have in the last couple of seasons," observes McBride.

However, McBride notes that

as she oversees the adult ED, her observations do not reflect how the flu has impacted pediatric cases this season. She adds that the adult ED sees about 180 patients per day, typically.

While flu volume and severity have not been unusual this year at VUMC, the season has come with some unique challenges. "The phenomenon I am noticing this year is that it seems like our nursing staff have had more cases of the flu among themselves, so we have had a couple of staffing challenges," says McBride. "We have started to have two on-call nurses, so that when calls come up we have more than one person to rely on."

Also, McBride notes that ED administrators have beefed up their infection prevention efforts. "We're being more vigilant with hand hygiene, and our leadership team is doing hand-hygiene audits to reinforce that," she says.

The ED participates in a hospital-wide peer-vaccinator program that enables members of the leadership team to administer flu vaccinations within the department, adds McBride. This has made it easier and more convenient for emergency staff to get vaccinated. "Our staff this year had to fill out a waiver form if they elected not to get vaccinated, and some of those waivers have been denied," explains McBride. "Also, our occupational health department is monitoring that and sending out frequent reminders to those who have not been vaccinated." ■

Editor's note: Interestingly, none of the EDs contacted by ED Management *for this article reported making use of Google Flu Trends, or any other new flu prediction tools, designed to help health care providers better anticipate demand. However, it is possible that some of the sources EDs rely on for predictive information, such as local health departments for example, may be looking to these tools for anticipatory guidance. Most EDs utilize their own census and markers of acuity, such as admissions, as a surveillance method for influenza and other community illnesses. Their data should help public health providers develop action plans for response to outbreaks of illness.*

SOURCES

- **Joyce Farrer**, RN, MSN, Administrator, Emergency Medicine, Henry Ford Health System, Detroit, MI. E-mail: jfarrer@hfhs.org.
- **Wendy Gelbard**, MD, Associate Chair, Clinical Operations, Emergency Department, University of Rochester Medical Center (URMC) in Rochester, NY. E-mail: wendy_gelbard@urmc.rochester.edu.
- **Emily McBride**, MSN, RN, Manager, Adult Emergency Department, Vanderbilt University Medical Center, Nashville, TN. E-mail: Emily.mcbride@vanderbilt.edu.

Despite positive new research findings, use of antiviral meds against the flu remains controversial

A new study lends support to the Centers for Disease Control and Prevention's (CDC) move in January to recommend early, aggressive treatment with antiviral drugs in patients who present with symptoms of the flu. The new research, conducted by investigators at the University of Michigan, the London School of Hygiene and Tropical Medicine, and the University of Alabama, and published online in *The Lancet*, found that oseltamivir, which is marketed as Tamiflu, can shorten the duration of symptoms by about a day, and reduces by 44% the development of respiratory infections.[1]

Previous research has questioned the effectiveness of antiviral drugs, especially in light of side effects from the treatment, which can include nausea and vomiting. However, investigators from the latest research say previous studies combined patients who were infected with the flu with patients who were not infected, which diluted the positive impact of the treatment.

The new research included a meta-analysis of data from all the published and unpublished trials between 1997 and 2001, involving 4300 patients, more than half of whom were treated with oseltamivir. The researchers found that when the drug was prescribed at its normal dosage of 75 mg twice/day for adults within 36 hours of the first onset of symptoms, the duration of illness was reduced by 21%.

Further, in addition to reducing respiratory tract infections requiring antibiotics, investigators found that the drug decreased hospital admissions by 63%.

However, the new findings are not likely to quiet the controversy over antivirals. Some researchers are already questioning the new findings, noting that Roche, the company which markets oseltamivir, provided funding for the study, and that one of the

researchers involved works for Gilead Sciences, a pharmaceutical company that owns patents on oseltamivir. ■

REFERENCE

1. Dobson J, Whitley R, Pocock S, Monto A. Oseltamivir treatment for influenza: A meta-analysis of randomized controlled trials. *Lancet* 2015; DOI: http://dx.doi.org/10.1016/S0140-6736(14)62449-1.

Use mystery observers, staff input to boost hand-washing compliance

It's no secret that one of the most effective ways to prevent transmission of the flu is by insuring that emergency clinicians and staff are rigorously washing their hands; however, maintaining compliance with this practice is difficult in a busy emergency setting. Nonetheless, administrators at Henry Ford Hospital in Detroit, MI, have made significant strides in this area by regularly having "mystery observers" pose as visitors to patients in the ED just to check up on how compliant clinicians and staff are with recommended hand-washing practices.

The assignment is entirely an inside job, notes **Joyce Farrer**, RN, MSN, the administrator of emergency medicine in the Henry Ford Health System. "We are a four-hospital system and we have 51 clinics, so we share staff on the infection control committee," she explains, noting that it is not hard to find a staff person from within the system who can perform the mystery observer duties without being recognized.

"We are pretty slick in how we do it," says Farrer, explaining that either she or one of her managers typically provides the mystery observer with the name of a patient who is currently in the ED. When the observer, posing as a visitor, tells the front desk he or she is there to see the patient, the front desk simply directs the observer to where the patient is being treated. This stealth approach provides the observer with an opportunity to check up on whether staff members are rigorously washing their hands without staff knowing when or where they are being scrutinized.

After four years of utilizing the mystery observers, it is clear that the approach works. "When we first started, our compliance rates were around 75% ... and we are now hitting around 92%," notes Farrer. "We post the results so that there is a kind of competition between groups, and we have huddles twice a day where we are reminding staff to wash their hands."

Administrators also regularly seek staff input on how to boost compliance further through the hospital's practice counsel, a panel comprised of staff members who are elected by their colleagues. "We have [the practice counsel] tell us where we need to put more hand sanitizers, and then housekeeping is responsible for making sure that hand sanitizers are always available," explains Farrer. "The housekeeping supervisor monitors to make sure that hand sanitizer is always well-stocked [in all of the preferred locations]." ■

Borrowing yet another technique from manufacturing, investigators find that 'operational flexibility' can offer dividends to ED operations

Modeling technique suggests that designating flexible beds, capable of receiving both high- and low-acuity patients, can lower wait times in a busy 50-bed ED

The practice of funneling low-acuity patients into a "fast-track" area so that they can be seen and discharged more quickly is commonplace. Patients with higher levels of acuity are cared for in the main ED, an area set up to handle higher-level care. This type of organization has helped to improve efficiency and resource allocation in many departments. But is this sort of division the best way to optimize resources and limit patient waiting?

Not necessarily, according to some intriguing new research conducted at the University of Cincinnati (UC) in Cincinnati, OH. Using discrete-event simulation

to model patient flow through a 50-bed ED that receives 85,000 patients every year, investigators have concluded that the creation of an intermediate "flex" track between the high- and low-acuity areas could substantially reduce patient wait times and further improve efficiency.[1]

Specifically, the analysis found that the addition of a three-bed flex track produced a mean patient waiting time of 30.9 minutes. The traditional division between fast track and high-acuity beds produced a mean waiting period of 40.6 minutes, and a department where all the beds were totally flexible produced a mean wait time of 35.1 minutes.

While a real-world test of the approach has yet to take place, investigators believe that the modeling approach used in this case could be helpful in pointing other ED leaders toward operational models that are ideally suited to their departments.

Recognize system imbalances

Trying to balance staffing and resources with incoming demand is a constant challenge for ED administrators. Indeed, what prompted investigators at UC to delve into the issue was the observation that this balance was at times suboptimal in the ED at the University of Cincinnati Medical Center (UCMC), a teaching hospital and level 1 trauma facility.

"I was spending some time in the ED and saw periods when the main part of the ED was full with waiting [patients] and there were available beds in the fast-track area," explains **Lauren Laker**, MBA, the lead author of the study and a PhD candidate in operations, business analytics, and information systems in the Carl Lindner College of Business at UC. "We had some unused resources and beds that were there and not being used, so the question became was there a better way to use some of these resources to balance out some of that demand variability that happens throughout the day."

To answer this question, Laker and colleagues decided to use discrete-event simulation, a modeling technique that enables testing of various patient flow scenarios without disrupting the operations of the ED.

One of the advantages of using discrete-event simulation is that you have the ability to include many different variables, observes Laker. "We incorporated service time and a lot of different factors like that in our analysis," she explains. "You can actually incorporate a lot of movement. It allows you to [describe] what is going on, and lets you do a pretty good job with sensitivity analysis as well as testing a lot of different things within one model."

Using this modeling approach, investigators concluded that when a three-bed flex track was created that could accommodate both high-acuity patients categorized as emergency severity index (ESI) 2 or 3 and low-acuity patients categorized as ESI 4 or 5, patient wait times were more than 30% lower than when ED beds were more rigidly assigned as either "high-acuity" or "low-acuity." In the analysis, the flex-track approach also outperformed total bed flexibility, in which any bed could be assigned to any patient regardless of acuity.

Play with different flow scenarios

Specifically, the flex-track beds were taken from the fast-track area, which typically contains 10 beds. Further, while high-acuity patients had priority access to the flex beds, these beds were also available to low-acuity patients when the 40 high-

EXECUTIVE SUMMARY

Through the use of a sophisticated modeling technique, investigators at the University of Cincinnati have found that the creation of a so-called "flex track" that includes beds that can be assigned to either high-acuity or low-acuity patients has the potential to lower mean wait times for patients when it is added to the traditional fast-track and high-acuity areas of a 50-bed ED that sees 85,000 patients per year.

- Investigators used discrete-event simulation to model the patient flow and characteristics of the ED at the University of Cincinnati Medical Center, and to test out various operational scenarios without disrupting real-world operations.
- The investigators concluded that patient wait times were lowest when three flex beds were appropriated from the 10-bed fast track area of the ED.
- In light of the results, three flex rooms are being incorporated into a newly remodeled ED scheduled for completion later this spring.
- Investigators suggest the modeling technique could be useful to other EDs interested in optimizing their operational plans. Further, they suggest that ED administrators consider ways to introduce flexibility into departments that are now more rigidly divided between high- and low-acuity areas.

acuity beds were not filled to capacity. The model was based on the patient volume, size, and characteristics of the ED at UCMC.

Investigators tested scenarios, setting aside as many as five flex beds, but found that the optimal number of flex beds for this ED was three. "Three beds isn't this global universal policy that works well all the time. It just happens to work well a lot of the time," explains **Craig Froehle**, PhD, a professor of operations and business analytics in the Carl Lindner College of Business and College of Medicine at the University of Cincinnati, and a co-investigator on the research. "Then, if you move to a period where you have a slightly different mix of patients or slightly longer or shorter service times … then you will find that a slightly different number of flex beds will produce the optimal [results] in terms of the lowest amount of patient waiting overall."

The point is that the optimal number of flex beds for EDs with different volumes and characteristics is likely to be different, but the research suggests that some level of flexible capacity could well be beneficial in many EDs, notes Froehle.

In fact, in light of these results, hospital administrators at UCMC have incorporated room for a flex track of sorts in a new structure scheduled to open this spring. "The redesign of the front end and the intake area [of the ED] has three of what they are calling flex beds that will be able to accommodate both your traditional low-acuity/fast-track patients as well as patients of moderate acuity, ESI 3 or ESI 2," says Froehle. "The planning is already underway to make sure those [beds] are integrated into operations as fluidly as possible."

Incorporate more flexibility

Froehle believes that discrete-event simulation as a technique has a lot to offer hospital administrators who are in constant search of better ways to match resources with demand in their EDs. "The strength of discrete-event simulation is really in terms of its flexibility," he says. "You can apply it to a vast number of scenarios, including very simple problems as well as very, very complex problems."

Froehle adds that discrete-event simulation is much more scalable than cuing analysis or a mathematical approach, but he stresses that it requires good operational data, which are challenging in health care environments. "One of my biggest frustrations whenever I go into any study is the lack of good, high-quality, operational data," he says. "Electronic health records have gone a long way toward collecting better clinical data, but in terms of time-stamping actual events, we still have a long way to go."

Indeed, to carry out this study, investigators relied on time stamps from ED operational data in order to model patient flow through the ED, beginning with the arrival of the patient and proceeding through triage, patient waiting, service time, and discharge. For the results to be meaningful, the data must be reflective of what actually occurs.

In addition to the challenge of obtaining high-quality operational data, some hospitals may also find it challenging to access the specialized expertise needed to conduct discrete-event simulation exercises, acknowledges Froehle. However, he notes that even if this type of specialized expertise is unavailable, hospitals can still take steps to incorporate more flexibility into their ED operations.

"Think about what it would take to even have just one room that might flex between a fast track and a traditional role as needed, how it would be staffed, what physical changes might be needed, and what kind of rotation implications it might have if, for example, it is a teaching hospital," suggests Froehle. "Working through some of those managerial issues would be a useful first step [for ED administrators], even if they only want to use one room as a pilot."

However, for hospitals that do have access to the necessary expertise, Froehle sees a number of advantages to using discrete-event simulation to improve operational efficiency. "You don't disrupt day-to-day operations, you don't invest a lot of money, and if you have data, then they can be a fairly cost-effective and less disruptive way to evaluate what the best call should be," he observes.

Focus on core concepts

The idea of using flexibility as a technique to improve operational efficiency is just the latest tool that health care has borrowed from other industries, offers Froehle. "We have been working on flexibility as a technique in other industries for many, many decades, so it is rewarding to see that the same lessons that we have learned from manufacturing and hospitality service industries are just as applicable to health care," he says. "And the reception and the response have been very good."

While there are no current plans for further study of the "flex track" idea, Froehle notes that it would be interesting to explore how the flex beds are implemented in

the ED at UCMC later this year. "The physical redesign of the ED is quite substantial, so the learning curve is going to be significant for everybody," says Froehle, although he acknowledges that it would be very difficult to separate the effect of the flex capacity vs. the effect of the overall system change.

Nonetheless, with increasing pressure on EDs to conserve resources while caring for higher volumes of patients, the authors are engaged in further work on the larger issue of how best to make use of operational flexibility. "The core concept of flexibility is not novel," notes Froehle. "But what we are seeing is that we are now getting to the point where we can have conversations with informed components of the health care delivery system to say: Here are some core concepts. How might we employ them to make the care delivery system better?" ■

REFERENCE

1. Laker L, Froehle C, Lindsell C, et al. The flex track: Partitioning between low and high-acuity areas of an emergency department. *Ann Emerg Med* 2014;64:591-603.

SOURCES

- **Craig Froehle**, PhD, Professor, Operations and Business Analytics, Carl Lindner College of Business and University of Cincinnati College of Medicine, Cincinnati, OH. E-mail: craig.froehle@uc.edu.
- **Lauren Laker**, MBA, PhD Candidate, Operations, Business Analytics, and Information Systems, Carl Lindner College of Business, University of Cincinnati, Cincinnati, OH. E-mail: lolomathlaker@yahoo.com.

Researchers offer up a mnemonic tool to guide clinicians who must assess decision-making capacity in patients during emergency situations

Tool prompts clinicians to quickly consider key qualities, abilities that must be present to establish that a patient has decision-making capacity

Emergency providers need to make quick decisions when patients are brought into the ED with life-threatening conditions, and, of course, these decisions need to be consistent with the patient's wishes. However, what does the provider do if he or she has an inkling that a patient's decision-making capacity may be compromised?

It's a challenging circumstance and it is also quite common, according to **Joseph Carrese**, MD, MPH, a professor in the Department of Medicine at the Johns Hopkins University School of Medicine, and a core faculty member at the Johns Hopkins Berman Institute of Bioethics in Baltimore, MD. "These can be high-stakes situations," he says. "There is a continuum of seriousness, but certainly in a country where we are having an epidemic of older patients with dementia and Alzheimer's disease, for example, these issues come up very frequently, and

EXECUTIVE SUMMARY

Clinicians from Johns Hopkins University School of Medicine have developed a mnemonic-driven tool to help clinicians quickly assess whether patients have decision-making capacity during emergency situations. The approach uses the mnemonic "CURVES" to guide physicians to first consider whether patients have decision-making capacity, and then to determine whether treatment can be commenced without informed consent.

- The first four letters of the mnemonic "CURVES" stand for: choose and communicate, understanding, reason, and value. The authors note that these four qualities/abilities need to be present to establish decision-making capacity.
- The last two letters of the pneumonic stand for emergency and surrogate, prompting physicians to consider whether the patient is at imminent risk and whether there is a surrogate decision-maker available.
- The authors note that while the issues represented by the CURVES pneumonic should be very familiar to clinicians, effective use of the tool requires training and practice.

physicians need to know how to deal with them."

To date, there hasn't been much in the way of practical guidance to help physicians quickly assess the decision-making capacity of patients in emergency situations, but Carrese and three co-authors, led by **Grant Chow**, MD, chief electrophysiology fellow at the Heart and Vascular Institute at Johns Hopkins University School of Medicine in Baltimore, MD, have developed an approach that they believe can help to fill this void.[1]

Focus on key considerations

At the heart of their approach is the mnemonic "CURVES," which is designed to cue physicians to the key considerations medical experts and ethicists say are important in determining decision-making capacity:

- The "C" stands for choose and communicate, prompting the provider to assess whether the patient can make and communicate a choice without coercion.
- The "U" in the mnemonic represents understanding, prompting the provider to consider whether the patient understands the risks and benefits of his or her choice as well as any alternative choices and the consequences involved.
- The "R" stands for reason, signaling that the provider needs to assess whether the patient is able to reason. This should prompt the provider to ask the patient to explain logically why he or she made the particular decision or choice.
- The "V" stands for value, and should cue a provider to think about whether the patient's choice is consistent with his or her values. Physicians need to make every effort to understand the patient's values as well as the reality that values and goals can change.
- The "E" stands for emergency. This should prompt the provider to consider whether there is an imminent risk to the patient.
- The "S" stands for surrogate, cueing the provider to assess whether a surrogate decision-maker is available.

The authors note that the first four letters in the mnemonic (CURV) represent steps that can help providers determine whether a patient has decision-making capacity, while the last two (ES) represent important considerations about whether emergency treatment can be delivered without informed consent.

Establish structure, document steps

The "CURVES" tool was drawn from the literature regarding decision-making capacity, but also relies heavily on the *Ethics Manual of the American College of Physicians*, explains Chow. "What we really wished to do with this was to quickly summarize what someone can do in a five-minute encounter, if we are forced into that sort of situation, to try our best to determine the best course of action in an emergency," he says.

In fact, what prompted Chow to delve into this issue was his own personal experience with difficult cases in which he struggled to ascertain whether he should provide life-saving treatment to patients who stated that they did not want the treatment, but it wasn't clear whether they had the appropriate mental capacity or stability in their current state to make such decisions. "I had no easy way of determining [decision-making capacity] in an expedited fashion," he explains. "That was one of the big challenges when we were in an ICU setting."

Chow adds that it is not unusual for clinicians to get the sense that a patient does not or may not understand what they are saying. "That person has to be able to reasonably give you a belief as a physician that they are able to do these four things [represented by the first four letters in the mnemonic]," he says. "Otherwise, it just doesn't sit right with you, and sometimes I think as a provider you just don't understand yourself why the decision a person just gave you doesn't sit with you quite right."

Effective implementation of the "CURVES" tool takes time, acknowledges Chow. "With any protocolized decision-making assistance tool like this, it takes practice. It is just like running a code," he says. "You need to look at it ahead of time, and it is one of those things, just like a code algorithm, that you need to keep right at the tip of your brain for when the situation arises."

However, Carrese notes that issues raised by the "CURVES" tool are hardly unfamiliar to medical students or practicing clinicians. "Communicating with patients, patients making choices, and patients understanding what they are talking about — physicians get exposure to [those issues] throughout medical school and residency training, so they will be familiar with these domains and how to go about assessing them," he says. "What they will be less familiar with is how these are packaged in a way that will help them [achieve] the clinical skill of assessing decision-making capacity, so I think that is really where the challenge comes in training."

Chow observes that while the issues

represented by the mnemonic may not be new to clinicians, the tool can help them organize things in their minds so that they don't miss an important step when they encounter a patient in an emergency situation. "It can also help you document what you have done which helps to keep things safe and in a very stepwise fashion," he says.

Continue the discussion

There are no plans to put the CURVES tool through any kind of rigorous testing, but Carrese observes that the tool has prompted further discussion and debate about the issues involved, and some clinicians have embraced it. "People are using this, other papers have cited it in the literature, and when I go to ethics meetings, people come up to me and say they are using it when they are teaching," he explains. "Clinical educators who are interested in bioethics are teaching medical students or residents to use this as a way to succinctly convey information about assessing decision-making capacity to those learners."

Chow adds that he, too, has received positive feedback about the approach. "It just seems to me that [people] are happy to have a structured way of approaching these problems," he says. "If you don't have a structured way, sometimes it can be very daunting for somebody in training."

Chow also notes that some groups have amended the mnemonic by adding a couple of letters to it. "I think that speaks to how many people are interested in it and how many people do wish for something like this to be widely available," he says. "Hopefully we will be able to come to a consensus as to what is the best way of figuring out what somebody would want in an emergency — and how we can determine that quickly." ■

REFERENCE

1. Chow G, et al. CURVES: A mnemonic for determining medical decision-making capacity and providing emergency treatment in the acute setting. *Chest* 2010;137:421-427.

SOURCES:

- **Joseph Carrese**, MD, MPH, Professor, Department of Medicine, Johns Hopkins School of Medicine, and Core Faculty Member, Johns Hopkins Berman Institute of Bioethics, Baltimore, MD. E-mail: jcarrese@jhmi.edu.
- **Grant Chow**, MD, Chief Electrophysiology Fellow, Heart and Vascular Institute, Johns Hopkins University School of Medicine, Baltimore, MD. E-mail: gchow2@jhmi.edu.

ED CODING UPDATE

Culture change in the ED: There is still ample room for improvement

[This quarterly column is written by Caral Edelberg, CPC, CPMA, CAC, CCS-P, CHC, President of Edelberg Compliance Associates, Baton Rouge, LA.]

Never have patient flow issues been as important as when YOU or a family member are the patient and the ED you choose to visit is completely oblivious to maximizing provider efficiency, improving patient flow, and providing good care. After many, many years of my involvement in the emergency medicine specialty, I thought the days of not seeing a provider for hours after arrival, having orders finally given but ignored by nursing staff, and nurses refusing to meet the eyes of patients standing in the doorway after hours of waiting to see a provider were well behind us. Turns out I was wrong!

For those of us "in the family" of emergency medicine, we generally have a luxury few of our ED patients enjoy. When we need emergency care, we visit a nearby ED where we know everybody or, at least, are known by someone on staff. We are treated with care and respect and generally leave feeling better. The real test comes when we are visiting another town, don't know the local EDs or providers, and end up in a dysfunctional ED facing what so many ED patients write to the local newspaper about: endless waits to get a bed, even when arriving by ambulance; an endless wait to see a provider; and followed by another endless wait to get basic testing completed. Then, and only then, is there a brief visit by a physician and, if you are lucky, an actual discussion with the doctor of where we go from here (e.g., upstairs, observation, or home).

As a result of my husband's current

battle with cancer, we have seen a lot of our nation's health care system. Much of it functions exceptionally, especially the specialty clinics and hospitals geared up to manage special problems with special solutions. However, our recent visit to an emergency department in one of our nation's top hospitals has us wondering why some hospitals are making good decisions and others are making very poor ones when it comes to ED staffing, patient flow, and caring about the patient.

We've all heard the horror stories, so I won't go into detail, but when I became that person who personally removed the IV and helped my family member elope or LWOT, I believe it made me a co-conspirator eloper, and an entirely new world of concern opened up to me.

Nothing is more frustrating to a patient than to look across an ED, see empty rooms but standing-room-only waiting areas with obviously sick patients, see ambulance patients "on the wall," and all staff tapping away on computers, either oblivious, unconcerned, or unmotivated. Maybe all three. Nobody looks up, nobody acknowledges the patients or ambulance attendants. In other words, "GO AWAY" is the message.

ED flow is, in general, predictably unpredictable during certain days, times of days, and seasons. Staffing needs are, in general, predictable with the right data. ED staff's good days and bad days are, in general predictable — we are all human. However, what shouldn't be acceptable in any emergency department is an attitude that nursing and provider staff needs (filling out electronic data rather than going to see a new patient, talking socially in earshot of patients, being in no rush to discharge a patient to empty a room for a new patient) should be prioritized over the needs of the patient. When caregivers refuse to provide comfort and care to their patients, it's time to hang up the stethoscope.

Hospitals like the one I experienced need to do a better job of developing culture change in their emergency departments, to ensure as best as possible that metrics are important (door-to-doc, throughput time, patient satisfaction, patient safety); that staff are caring and motivated, not just technically skilled medical care nurses and providers.

To develop and implement culture change, these hospitals will need a total commitment from the hospital C-suite, the nursing leadership of the hospital and the ED, and the physician leadership of the ED group and its medical director as well as some of the medical staff leadership. While culture change takes time, patience, and unwavering commitment, it is well worth it. A better working environment will lead to better staff retention, better nurse-doctor collaboration, and happier patients.

"Front-end" operations are critical areas of focus. Elements of well-managed ED front-end solutions should include consideration for immediate bedding, bedside registration, advanced triage (triage-based care) protocols, physician/practitioner at triage, dedicated "fast track" service line, tracking systems and whiteboards, wireless communication devices, kiosk self-check-in, and personal health record technology ("smart cards"). All of these are currently receiving considerable attention in the ED media and can be considered as potential solutions to streamline the front-end processing of ED patients. Though not necessary every day, these are potential solutions that become crucial during periods of significant capacity, overcrowding, and patient surges — guaranteed during the flu season but increasingly troublesome as ED volumes continue to climb.

The solution will be unique to your ED, but the investigation into how your ED currently functions, the identification of problem areas, the routine gathering of critical data about your ED operations, and your commitment to quality and meaningful interactions with your patients will determine which path you choose. ■

CNE/CME OBJECTIVES

After completing this activity, participants will be able to:

1. Apply new information about various approaches to ED management;
2. Discuss how developments in the regulatory arena apply to the ED setting; and
3. Implement managerial procedures suggested by your peers in the publication.

COMING IN FUTURE MONTHS

- The push for value in the emergency setting
- Battling nurse fatigue
- New focus on patient navigators in the ED
- Managing the uptick in demand for emergency care

ED MANAGEMENT®

CNE/CME INSTRUCTIONS

To earn credit for this activity, please follow these instructions:

1. Read and study the activity, using the provided references for further research.

2. Scan the QR code to the right, or log on to www.cmecity.com to take a post-test; tests are taken after each issue. First-time users will have to register on the site using the 8-digit subscriber number printed on their mailing label, invoice, or renewal notice.

3. Pass the online tests with a score of 100%; you will be allowed to answer the questions as many times as needed to achieve a score of 100%.

4. After successfully completing the test, your browser will be automatically directed to the activity evaluation form, which you will submit online.

5. Once the completed evaluation is received, a credit letter will be e-mailed to you instantly.

CNE/CME QUESTIONS

1. According to Emily McBride, MSN, RN, while flu volume and severity have not been unusual this year in the adult ED at VUMC, the season has come with some unique challenges, including:

A. more nurses themselves are coming down with the flu.
B. there is a shortage of flu vaccine.
C. patients are presenting with unusual symptoms.
D. all of the above

2. In the continuing debate about using antiviral medications to treat patients with the flu, new findings published in *Lancet* show that oseltamivir, which is marketed as Tamiflu:

A. provides little benefit when administered as directed.
B. is only slightly more beneficial than placebo.
C. shortens the duration of symptoms and reduces the development of respiratory infections.
D. causes too many debilitating side effects.

3. Administrators at Henry Ford Hospital in Detroit, MI, have made significant strides in boosting hand-washing compliance among ED clinicians and staff by:

A. implementing hand-washing audits.
B. using "mystery observers."
C. establishing a range of incentives.
D. posting reminder signs on all the patient rooms.

4. According to Lauren Laker, MBA, one of the advantages of using discrete-event simulation is that you have the ability to:

A. foresee the impact of catastrophic events.
B. test out new innovations.
C. eliminate unimportant factors.
D. include many different variables.