



Management

Best Practices, Patient Flow, Federal Regulations, Cost Savings, Accreditation

May 2014: Vol. 26, No. 5
Pages 49-60

IN THIS ISSUE

What emergency providers need to know about providing optimal care to older patients. cover

Do you need a senior-focused ED? What we know about costs, outcome 53

Lessons learned from geriatric care apply to patients of all ages with complex needs. Here's how. 53

Why emergency providers are among the first to take advantage of Google Glass 55

New guidelines for geriatric EDs: Guidance focused on boosting environment, care processes

Recommendations cover staffing, education, and transitions-of-care strategies

As documented in the CDC's National Hospital Ambulatory Medical Care Survey (NHAMCS), the population of patients being seen in American EDs continues to get older, except in EDs with a mission to serve children. This continues to be a quiet success story for the emergency system, as emergency care and public health efforts to reduce premature death from trauma, burns, and cardiac arrest have allowed the American population to enjoy much longer and healthier lives. Hospitals are increasingly focused on policies and practices that can more effectively meet the care needs of seniors. A number of hospital systems have opened

EXECUTIVE SUMMARY

A cadre of prominent medical groups, including the ACEP, ENA, AGS, and SAEM, has unveiled a comprehensive set of Geriatric Emergency Department Guidelines to aid hospitals that are either in the process of opening senior-focused EDs or revamping their policies and procedures to better meet the needs of an aging population. The guidelines offer recommendations related to staffing, infrastructure, education, and transition-of-care strategies. In addition, they outline a host of screenings that studies have shown are beneficial for older adults.

- Experts note that hospital systems around the country have already opened 50 geriatric EDs, with many more facilities in development.
- Guideline authors state that the guidelines take an evidence-based approach to managing senior patients.
- While more cost and outcomes data are needed, experts say that senior-focused improvements to emergency care can reduce admissions and return visits to the ED while also boosting patient satisfaction.
- Future efforts will focus on prioritizing the guideline recommendations so that ED administrators concerned with improving senior care will tackle the most important changes first.

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.

specialized units or sections within their traditional EDS that are devoted to caring for older patients. However, until recently, hospital and ED administrators have had little in the way of guidance on how to proceed in developing a senior-focused ED, and most experts would acknowledge that data regarding outcomes and costs are still very much lacking in this area.

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. Telephone: (404) 262-7436. 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.

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 12.5 nursing contact hours using a 60-minute contact hour.

Provider approved by the California Board of Registered Nursing, Provider #14749, for 12.5 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 a maximum of 15 *AMA PRA Category 1 Credits*™. 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.

Subscriber Information

Customer Service: (800) 688-2421 or fax (800) 284-3291 (customerservice@ahcmedia.com). Hours of operation: 8:30 a.m.-6 p.m. Monday-Thursday; 8:30 a.m.-4:30 p.m. Friday, EST. Subscription rates: U.S.A., one year (12 issues), \$519. Add \$19.99 for shipping & handling. Outside U.S., add \$30 per year, total prepaid in U.S. funds. Discounts are available for group subscriptions, multiple copies, site-licenses or electronic distribution. For pricing information, call Tria Kreutzer at 404-262-5482. Missing issues will be fulfilled by customer service free of charge when contacted within 1 month of the missing issue date. Back issues, when available, are \$82 each. (GST registration number R128870672.)

Photocopying: No part of this newsletter may be reproduced in any form or incorporated into any information retrieval system without the written permission of the copyright owner. For reprint permission, please contact AHC Media, LLC. Address: P.O. Box 550669, Atlanta, GA 30355. Telephone: (800) 688-2421, ext. 5491. Fax: (800) 284-3291. World Wide Web: <http://www.ahcmedia.com>.

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 for 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).

Editorial Director: **Lee Landenberger** (lee.landenberger@ahcmedia.com).

Copyright © 2014 by AHC Media, LLC. ED Management® is a registered trademark of AHC Media, LLC. The trademark ED Management® is used herein under license. All rights reserved.

Editorial Questions

For questions or comments, call **Leslie Hamlin**, (404) 262-5416.

AHC Media

All hospitals except pediatric facilities are serving older populations, and there are already more than 50 EDs set up to cater to the needs of older populations, with more to follow. A cadre of groups, including the American College of Emergency Physicians (ACEP), the American Geriatrics Society (AGS), the Emergency Nurses Association (ENA), and the Society for Academic Emergency Medicine (SAEM), has jointly issued a comprehensive set of Geriatric Emergency Department Guidelines. (The full guidelines can be accessed here: www.acep.org/geriEDguidelines/).

While the guidelines provide a template of sorts, delineating what is required in terms of staffing and infrastructure to set up a geriatric ED, the authors stress that the new guidance is not just designed for administrators who are planning to open senior-focused facilities or units.

“The development of the guidelines was intended to really look at an evidence-based approach to not only managing care for seniors, but in developing a system of care for seniors when it comes to their emergency care, emergency management, and emergency partners,” explains **Mark Rosenberg, DO, MBA, FACEP, FACOEP-D**, chairman of ACEP's Geriatric Emergency Department Guidelines Task Force, and chairman of Emergency Medicine, Geriatric and Palliative Medicine, St. Joseph's Healthcare System, Paterson, NJ. “So the guidelines involve not only the environment of care, but also transition of care strategies, and the assessment of delirium, dementia, depression, and a host of other screenings that are necessary when you are dealing with an older geriatric patient.”

Consider unique needs of seniors

Rosenberg likens the emerging trend toward the creation of geriatric EDs to what happened with respect to pediatrics a generation ago when hospital systems were building children's hospitals and pediatric EDs. “Now we are starting to see these [specialized] needs for seniors,” Rosenberg states.

“The [intent] of the guidelines was to develop a standardization or at least a goal for EDs who want to specialize in better care for seniors.”

Health care experts broadly agree that older patients have unique health care needs, but rapidly changing demographics and regulatory pressures have clearly pushed hospitals to consider these needs in a more comprehensive way. The new guidelines point out that according to the latest Census figures, there were more than 40 million

Americans older than the age of 65 in 2010, and that the population aged 85 and older is growing at a rate that is nearly three times faster than the rate of the general population.

The NHAMCS data also clearly show that older adults have a high demand for emergency care, notes **Timothy Platts-Mills, MD**, a co-author of the new guidelines and an assistant professor of emergency medicine at the University of North Carolina at Chapel Hill, NC. “Older adults have a very high rate of acute, severe illness and injury ... and additionally they have a lot of requirements for after-hours care,” explains Platts-Mills, noting that he is speaking as a researcher and clinician rather than on behalf of the other guideline authors or of the sponsoring organizations. “Are there ways we can do this better? I think even though the evidence is not overwhelming for this, the answer is definitely yes. There are better and less better ways to do this.”

To be sure, there are some documented benefits to senior-focused care. For instance, Rosenberg points out that patients who receive services in senior-focused EDs are more satisfied with their care. “We also know statistically that patient admissions go down, and this is measurable and quantifiable,” says Rosenberg. “At my institution we went from 54% to 46% of our seniors who would be admitted [from the ED]. And we know that we have seen a decrease in returns to the ED for the same complaint. Practically, that is because of improved patient transition-of-care strategies.”

Even though more cost and outcomes data are needed, an increasing number of older adults are seeking emergency care, and more geriatric EDs are being developed. “This is all moving forward so we thought that at least having some expert consensus around what it is to have a geriatric ED, and what that should look like, was important even if the evidence isn’t there yet to support every suggestion we made,” says Platts-Mills. (Also see: “Senior-focused EDs: Plenty of buzz, but outcomes/costs TBD,” p. 53.)

‘It takes a village’

Through structure and organization, the guidelines emphasize three main areas: staffing, follow-up and transitions of care, and education, observes Platts-Mills. “These areas are where there is a lot of [potential] for administrators to improve the quality of care for older adults,” he says.

Of particular importance is the way organizations use these three areas to identify and address

the priorities of care for the older patient, says Platts-Mills. “Older patients vary a lot in terms of what their priorities are. Some are very high functioning and are sick and want maximal care, and some are not high functioning and they are sick and they may not actually want maximal care,” he says. “Then some older patients aren’t too sick, and they are able to go back to the community, but they may have a lot of disabilities, and so the potential for a well-run ED to help older adults return home or return to a nursing home safely is large. I think there is a lot of potential added value.”

For instance, if an older patient presents to the ED because he fell in a nursing home, the care decisions made by a provider can vary greatly, observes Platts-Mills. “You can spend a lot of money very quickly by doing tests in the ED, and I think emergency physicians realize this,” he says. “But it requires extra time and support to have conversations with the people in the nursing home who saw what happened, with the family members to get a better understanding of what the preferences are, and then coordinating things at home to make sure that yes, there is a neighbor who can check on the patient and yes, there are home health people who can come by the following day, and yes, the primary care physician can see the patient within 48 hours.”

All of this extra work takes time and energy, and EDs can only accomplish these tasks with the proper staffing and organization, but such resources can add tremendous value both to the patient and to the health care system, says Platts-Mills. “If you have a geriatric ED or the components of a geriatric ED — meaning a social worker, connections to a primary care system that can take care of the patient, and resources in the community — then you can really make a big difference,” he says. “Yes, it is complicated. It sort of takes a village to take care of older adults, so part of the role of the ED is being at the center of the village or one of the hubs of the village, and being connected to the other parts of the village.”

Further, clinician education is central to providing effective care to the older patient, says Platts-Mills. “Medications are a common contributing factor to all sorts of adverse events, including falls,” he says. “Also, [education about] looking for more subtle symptoms or presentations in the setting of trauma or acute coronary syndrome; signs and symptoms in older patients sometimes will not be as obvious.”

Effectively caring for a geriatric patient requires

added training in many different areas, adds Platts-Mills. “Some of this involves developing a comfort level in communicating with older adults and their families, treating their pain, and addressing their symptoms without having a fear of legal concerns or something else,” he says.

Aim for a protocol-driven care system

Rosenberg reiterates that it is not reasonable or financially feasible for all hospitals to establish separate geriatric EDs or units. However, they can still rely on the guidelines to improve the care they provide to older adults. In fact, he notes that many of the changes that the guidelines recommend are not just good for seniors; they’re better for all patients. For instance, with respect to environmental factors, non-slip, non-glare floors, dimmable lighting, thicker mattresses, and soothing paint colors make sense for all patients, he says. (Also see: “Care transitions: Geriatric medicine offers a roadmap to follow for managing patients of any age with complex care needs,” p. 53.)

All types of hospitals and EDs are planning to improve the delivery of services to older patient populations. Rosenberg recalls the administrators of a 6,000 visits a year ED wanted to create a senior-friendly ED — even though they only had about a half-dozen beds to work with. “I said let’s make the whole ED more senior friendly,” he says. “Let’s look at the lighting and those types of things, but also for the 65-and-older population, let’s come up with policies, protocols, and care strategies that will be uniquely beneficial for that age group, and that’s what we did.”

In his own setting, Rosenberg says there have been many improvements in care for senior patients, but one particularly obvious stride is that clinicians are doing a much better job of diagnosing cases of delirium — one of the conditions commonly misdiagnosed in the senior population. “It is hard to imagine how many cases we would have missed under the old model of care, but we are now doing delirium screening on everybody and we are picking up more cases,” he says.

Similarly, by performing nutritional assessments on patients, clinicians are picking up more cases of malnutrition, a condition that puts seniors at risk for revisits to the ED, says Rosenberg. “It is not just painted walls, sound-proofing, and thicker mattresses. It is a whole protocol-driven care system that is unique for the needs of seniors,” he says.

However, Rosenberg acknowledges that the

guidelines offer so many recommendations that it may be difficult for administrators to discern where to begin their senior-focused improvement efforts. Consequently, he is working with ACEP’s geriatrics section to put together a workgroup to prioritize the recommended steps and practices. This way, if an administrator is planning to open up a geriatric ED, he or she will be able to focus on the most important things first, explains Rosenberg.

“Some things are very, very easy. The cost of creating a geriatric ED should not be unobtainable within the budgetary constraints that hospitals are going through,” observes Rosenberg. “You don’t have to add big expense to get better care, better patient satisfaction ... better management of patients whether they need admission or don’t need admission, and better transitions of care. Much of this can be done by just coordinating [existing] resources.”

If the Affordable Care Act helps to link more seniors with primary care providers, that should help EDs better focus their efforts on behalf of senior patients as well, notes Platts-Mills. “Then, hopefully, there will be somebody who has a clear sense of what the patient’s priorities are and what sorts of problems they face,” he says.

However, Platts-Mills hastens to add that emergency providers should not worry that they will somehow be displaced by PCPs. “There is a common misconception that primary care, once it is set up properly, will make the need for emergency care go away, and that is not supported by any of the data that we have,” he says. “Emergency care and primary care are not substitutes. Primary care increases the recognition that patients have medical problems and one of the ways that we treat medical problems is through emergency care.” ■

SOURCES

- **Alicia Arbaje**, MD, MPH, Director, Transitional Care Research, Johns Hopkins Bayview Medical Center, and Assistant Professor of Medicine, Johns Hopkins School of Medicine, Baltimore, MD. E-mail: arbaje@jhmi.edu.
- **Robert Maliff**, MBA, Director, Applied Solutions Group, Emergency Care Research Institute (ECRI), Plymouth Meeting, PA. E-mail: rmaliff@ecri.org.
- **Timothy Platts-Mills**, MD, Assistant Professor of Emergency Medicine, University of North Carolina, Chapel Hill, NC. E-mail: tplattsm@med.unc.edu.
- **Mark Rosenberg**, DO, MBA, FACEP, FACOEP-D, Chairman,

Senior-focused EDs: Plenty of buzz, but outcomes/costs TBD

One indication that senior-focused emergency care settings are catching on: For the first time, geriatric EDs have appeared on the Plymouth Meeting, PA-based Emergency Care Research Institute's (ECRI) Top 10 Hospital C-Suite Watch List, an annual list of new technologies and health system developments that providers and policy makers should "think carefully about," according to ECRI. (To download a copy of the report, visit www.ECRI.org, and click on the C-Suite Watch List under "Hot Topic Resources" on the right.)

In its comments on geriatric EDs, ECRI notes that in addition to the existence of at least 50 senior-focused EDs, more than 100 of these facilities are in development at hospital systems across the country. But the report also emphasizes that there is not much data to show that geriatric EDs are cost-effective.

"There are some studies showing reduced admissions to an intensive care unit ... but there really isn't an awful lot of material out there saying that these are a bona fide plus on the financial charts," explains Robert Maliff, MBA, the director of ECRI's applied solutions group. "I think what we are seeing is that as health care transitions from a fee-for-service environment to a value-based purchasing environment and the ACO [accountable care organization] model ... there is a lot of interest in these."

Whether geriatric EDs will prove to be successful under the newer financial models is an open question, but Maliff notes that many health care organizations clearly believe that the approach will work. "They are thinking that from a patient perspective they will be successful, from a financial perspective that they will be beneficial, and that from a marketing perspective they will be successful as well," he observes.

But that doesn't mean that all hospitals, large and small, should immediately start figuring out how to open senior-focused EDs of their own. For one thing, Maliff stresses that hospitals need to conduct market analyses to see how many senior-

aged patients a new facility would likely serve, and they also need to consider the costs.

"The hard-core infrastructure of a senior ED, whether it is a totally separate ED or a wing in the ED dedicated to seniors, is capital intensive," says Maliff. Indeed, ECRI's C-Suite Watch List report notes that the financial outlay required to build a new facility can run into the millions, although costs can vary greatly depending on an institution's needs and resources.

For many organizations, a better place to begin the process of developing a senior-friendly ED is by assessing whether you have staff in place who are trained in geriatric issues. "Do you have a geriatric nurse or a geriatric social worker who is able to support these patients when they present to the ED?" notes Maliff. "That is an important factor." ■

Care transitions: Geriatric medicine offers a roadmap to follow

While an increasing number of hospital systems are creating senior-friendly EDs, one new study suggests that many of the tenets of geriatric medicine are also applicable to the care of patients with complex health problems, especially with respect to care transitions.¹

"The main lesson that comes out of geriatrics is the whole idea of taking a holistic approach," explains Alicia Arbaje, MD, MPH, the director of transitional care research at Johns Hopkins Bayview Medical Center, and an assistant professor of medicine at Johns Hopkins School of Medicine in Baltimore, MD. "[With these complex patients] it is not just about a particular disease. It is about how all those diseases interact with each other that makes a patient end up back in the ED."

Arbaje notes that while it is easier to focus on a particular disease, complex patients require providers to consider a bigger picture. "Focusing on disease-specific interventions such as a heart failure clinic or some sort of bridge clinic that is focused on a particular disease is not going to be as helpful to someone who has multiple chronic conditions," she says.

A second lesson from geriatrics is the notion that providers should not just consider the patient, but also their immediate home community and the health system in the region that cares for the patient. "Especially for frail, older people and

others with complex needs, there is often a whole team of people who are trying to help,” observes Arbaje. “So spouses, children, the primary care practitioner (PCP), specialty physicians, social workers, and case managers also need to be included in interventions to help reduce readmissions.”

It is not enough to just notify a PCP that a complex patient has been to the hospital or the ED, notes Arbaje. “As doctors, we often say that as long we keep our patients safe, we have done our job. Our jurisdiction, so to speak, is the patient and maybe their family, but it is really much broader than that,” she explains. Consequently, she stresses that it is important to facilitate an exchange of information to all the different receivers of the patient.

Too frequently, home health agencies are left out of the loop, observes Arbaje. “They are often the ones who help manage these complex patients out in their homes and their communities ... but often times they don’t really get involved until after the fact,” she says. “They may not know what changes have been made, and they are often relying on the patients themselves for this kind of information, and we can’t let the patient be the only person providing this information.”

As is the case with many geriatric patients, complex patients often have cognitive and/or functional impairments from whatever diseases they have. “Maybe it is diabetes and they can’t walk very well, maybe it is arthritis, or maybe they are a dialysis patient and they have some cognitive issues around dialysis or functional impairments,” notes Arbaje. “They can’t move, they can’t think, and they can’t manage their health care. And that is a big driver of what is making people end up back in the ED, or making families frustrated that they can’t handle the patient anymore and therefore the ED is the next place to send them.”

Arbaje laments the fact that many of the interventions that have been developed to reduce readmissions and improve transitions of care stem from research on patients who don’t have a very high level of cognitive or functional impairment. “[Interventions] really need to incorporate the fact that many of these patients may not be able to implement a discharge plan that an ED has so carefully put together,” she says.

Consequently, Arbaje states that it is important to involve people who can assess the level of cognitive or functional impairment and identify community resources to address these deficits. This could involve referrals to physical or occupational thera-

pists, for example. “In some cases, the solution may be as simple as giving the discharge instructions to someone who isn’t cognitively impaired or functionally impaired, or making sure that the instructions are clear enough to be understood by the patient,” she says. “There needs to be follow-up because we know that cognitive and functional impairment can get better over time.”

Providers should keep in mind that there is only so much a patient or family can take on at one particular moment. Therefore, spreading the information out to others who can take it and then also having a time frame to follow up when people may be better able to receive the information may make sense in some cases, says Arbaje.

Having ED-based care coordinators who can take on some of these responsibilities is one potential solution. “This can be a case manager or a social worker, but the key is there needs to be those resources for them to coordinate to,” says Arbaje. “And there needs to be a sense of accountability around that.”

To achieve this accountability, hospitals and EDs may need to work with outside resources to devise new solutions. For example, Arbaje notes that in recent years there has been a big push to make sure that PCPs are notified whenever they have patients who are being discharged from the hospital or the ED so that they can follow up. “That is very good, but the reality is that most PCP offices are not able to handle this information as it is coming in,” says Arbaje. “There is usually not a workflow to pick that up. It is just not part of the culture. So you can push the information out, but there is usually not someone who can receive it.”

One way to rectify the problem would be to have PCP offices establish a mechanism to receive that information and have someone call those patients, says Arbaje. “Maybe there could be a partnership between the PCP offices and the ED to have certain slots available for people who have just been seen in the ED,” she explains. “There isn’t one clear answer because people are still trying to figure this [problem] out.”

With the emergence of accountable care organizations, more health care systems are experimenting with ways to get different parts of the health system to work more closely together to improve patient outcomes. With financial incentives behind such changes, more solutions should emerge, notes Arbaje. “The health systems that are going to be the most successful are going to be the ones that figure this out, embrace it, coordinate care, and establish a model that works for them.” ■

REFERENCE

1. Arbaje A, Kansagara D, Salanitro A, et al. Regardless of age: Incorporating principles from geriatric medicine to improve care transitions for patients with complex needs. *Journal of General Internal Medicine* 2014 Feb. 21. [Epub ahead of print]

Emergency providers see big potential for Google Glass

Device facilitates hands-free communications, telemedicine consults with specialists

There is no question that information technology (IT) offers many advantages to health care, but it has also introduced complications. One notable example is the disruption that occurs when providers must look away from their patients to enter or view information on a computer screen. Studies suggest this can be off-putting to patients, and providers can actually miss signs or symptoms because they are preoccupied with the computer.

However, with the unveiling of Google Glass, a wearable computer that enables users to pull up and view information without looking away from the patient, there is hope that not only will some of these IT-related problems be vanquished, but also that providers will find exciting new ways to leverage the technology.

In fact, among the first to experiment with Google Glass are emergency providers at a small but quickly growing number of hospitals. These early users are enthused about having hands-free data-retrieval capabilities, but they're also finding that the appliance — which is worn like a traditional pair of glasses — has intriguing potential to make telemedicine consults simpler, easier, and, perhaps, commonplace in the emergency setting. Although some obstacles to this type of large-scale use remain, it's clear that there is no shortage of ideas on how to use the technology in the emergency setting.

Device facilitates hands-free communications

Beginning in December of 2013, the ED at Beth Israel Deaconess Medical Center (BIDMC) began experimenting with a version of Google Glass that is compliant with the Health Insurance

Portability and Accountability Act (HIPAA). “A stealth startup company called Wearable Intelligence has been working very closely with us to design a custom application in which the Glass only talks to our internal services,” explains Steven Horng, MD, MMSc, one of four emergency providers at BIDMC who have been piloting the approach. “We see Glass as another platform to deliver our EDIS [ED information system].”

One of the things that makes this approach different from tablet-based applications is that the Google Glass platform is always on, delivering both wearable computing and ubiquitous computing, explains Horng. “It allows for information-retrieval tasks such as seeing what the patient's name is, what their allergies are, what their medical problems are, and what their vital signs and current complaints are,” he says. “The Glass knows where you are and who you are talking to because before you go in to see a patient, you can either scan a QR [quick response] code in front of the room to identify the patient or there are a couple of other ways that we can select patients.”

EXECUTIVE SUMMARY

Emergency providers are among the first in health care to experiment with Google Glass, a computer that is worn like a traditional set of glasses, enabling clinicians to pull up critical information from a patient's electronic medical record (EMR) or call for assistance without looking away from the patient. Special applications of the device can also be used to facilitate telemedicine consults with specialists while patients are still in the ED. According to early users, protecting patient privacy has not been a problem in early applications of the device. However, state-level laws remain a barrier to large-scale implementation of the technology in some regions.

- Emergency providers at Beth Israel Deaconess Medical Center in Boston, MA, see Google Glass as another platform for their ED information system. The approach is being used to facilitate hands-free communications and expedite workflow.
- At Rhode Island Hospital in Providence, RI, emergency providers are testing a telemedicine application for Glass that enables providers to connect patients with off-site dermatologists while they are still in the ED, eliminating the need for additional specialty appointments.
- Early users believe that Glass and similar innovations will eventually play a strong role in preventing readmissions by providing remote care to patients — especially in the first few days following discharge from the hospital or ED.

Providers can verbally instruct the appliance to pull up specific information, or they can scroll through the various computer screens of a patient's electronic medical record (EMR), for example, by tilting their heads up or down. "We have also enabled multi-gestures so if you cannot talk or if it is really noisy — or perhaps you don't want to verbalize what you are looking for — you can use your fingers to swipe back and forth to get through the screens," explains Horng. "There is a touchpad on the side of the Glass, so we try to find multiple ways of doing the same thing to investigate which way is most useful, but also to give the user a lot of flexibility."

One of the other things that Google Glass enables is hands-free communications. "[The device] is already on so you don't have to go get it. And you can not only receive messages, but you can also page providers," says Horng. "So if you are doing a central line and the patient is waking up and you need more sedatives, you can scream at the top of your lungs to get someone to help you, or you can just tell your Glass to page someone and do it that way."

Privacy needs to be safe-guarded

Horng recalls one recent case in which the device became particularly valuable. It involved a patient who came into the ED with a severe brain bleed. "The management priority for patients who have these massive brain bleeds is to quickly lower their blood pressure as well as to get them to the operating room," explains Horng. "This patient was still alert and awake and he was able to tell us that he was allergic to a blood pressure (BP) medication, but he really couldn't tell us which one."

Normally, in this situation the provider would need to cut away from the patient, log in to the computer, and search the EMR for the relevant information — a task that is time consuming, particularly when there is just one computer in the room, and potentially several people who need to be using it, notes Horng. "However, what Glass enabled me to do was not only find the allergy information, but I also found out that the patient was on a blood thinner, which is extremely dangerous in these patients," he says. "So quickly, while looking for other information, I found this other critical piece of information, and we were able to quickly start the patient on Kcentra, a medication used to quickly reverse anti-coagulation."

During the pilot testing period, beta users have worked with developers on a number of refinements to improve the stability and usability of the Google Glass application. "Some of these modifications include the addition of an external battery pack, increasing the wireless transmission power, pairing the headset with our clinical iPhone, and using head tilt to control vertical scrolling," explains Horng. "As the device was being used in clinical care, we needed to rigorously test our setup to ensure that the application was not only reliable and intuitive, but also improved the workflow for clinicians rather than impeded it."

While further refinements and enhancements are likely, at press time, BIDMC was getting ready to expand use of the Glass application to the rest of the ED. "Our biggest [priority] has been to ensure that the same safety and privacy safeguards that we have in all of our other web-based applications are also true on the Glass application, so in order to log in, providers have to have appropriate credentials," explains Horng, noting that if a provider loses a device or turns it off, all the information on it is wiped clean, so nothing is persistent on the device. "I would say privacy has to be the most important thing. If you can't meet those standards, then you obviously can't use the application for patient care."

Use telemedicine to streamline care

Oftentimes, patients who present to the ED need to be referred to specialists, requiring another appointment and more running around. But what if emergency providers could use Google Glass to connect patients with specialty care right on the spot? The idea doesn't seem particularly far-fetched to **Paul Porter, MD**, an emergency physician at Lifespan, a Providence, RI-based health care system that includes several medical centers including Rhode Island Hospital, the state's largest health care facility. In fact, Porter utilized a similar approach when he was in charge of the ED in Iraq as an army reservist.

"It was difficult and dangerous to transport patients within Iraq and back home to the United States, so I began using cell phone photos to contact specialists at Walter Reed National Military Medical Center [in Bethesda, MD] when necessary, and it worked very well," recalls Porter. "Since then, I have been looking for a way to get into telemedicine here at Lifespan in an effort to reduce costs while continuing to practice high quality emergency medicine."

Consequently, working with two residents, Peter Chai, MD, and Roger Wu, MD, Porter developed a study that involves using a special version of Google Glass to connect patients who present to the ED with visible skin conditions with specialists, utilizing the device's camera and audio capabilities so that an off-site outside specialist can see and communicate with the patient while he or she is still in the ED.

"Although we trialed other platforms, Glass' low unit cost was appealing," notes Porter. Each device costs roughly \$2,400, according to reports. "We think it will also provide higher quality care at the bedside and decrease the need for follow-up appointments. Also, with Glass specifically, we like the ability to maintain eye contact with the patients," adds Porter.

Under the study, which has been approved by Rhode Island Hospital's internal review board (IRB), Porter and his colleagues have set up a system to conduct tele-dermatology consults on select patients who meet the IRB criteria, explains Porter. "We chose dermatology as a starting point because it is one of the specialties that relies heavily on visual diagnosis while also being ... relatively scarce in terms of access," he observes. Further, the hospital estimates that the ED sees about 100 patients a month with the types of skin conditions that would lend themselves to this type of consult.

With this approach, Porter notes that patients should receive better real-time care without having to wait to see a specialist, although the formal results of the study will not be available for a few months. "As this is a feasibility study, we are not billing for the consults. However, we plan trial billing for consults after the end of our research," he explains.

Porter actually has far grander plans in mind. "We have the vision to build Rhode Island's virtual medical home for acute care, of which Google Glass will be one part, particularly in bringing a specialist to the bedside in time-sensitive areas such as stroke, orthopedics, and other specialties," he says. "

Further, Porter believes that Glass and similar innovations will eventually play a strong role in preventing readmissions by providing remote care to patients — especially in the first few days following discharge from the hospital or ED. Such linkages can help to ensure that patients are stable, they're taking their medicines as directed, and that they understand their recovery goals, adds Porter. "We believe that telemedicine with

Google Glass and a number of other small devices will provide the higher quality, lower-cost virtual medical home of the future," he says.

Consider state-level laws

For other emergency providers interested in going down this road, Porter cautions that there are significant obstacles. "In terms of the technical considerations, great care has to be taken because each HIPAA violation can generate very large fines," he says. "We not only had to find technology that works, but technology that is HIPAA compliant and encrypted from start to finish."

Porter found the kind of technology he was looking for at Pristine, an Austin, TX-based startup that is producing a stripped-down version of Glass that produces only live and encrypted video and audio, and is incapable of connecting to the Internet. These qualities preserve the kind of strict patient privacy that is required under HIPAA, explains Kyle Samani, the cofounder and CEO of Pristine. "A big part of our challenge is just trying to reduce this fear that Big Brother is watching, because he is not," stresses Samani, reiterating that the device is not recording.

Pristine offers two Google Glass applications. The EyeSight application is what is allowing Porter and his colleagues to consult with off-sight dermatologists while the patient is in the ED. A second application, CheckLists, is a reminder tool that enables physicians to consider every important task in specific clinical situations.

While Rhode Island Hospital is the first to use Pristine's device, Samani says he is in discussions with five other EDs that will be rolling out Glass applications in the next couple of months, and they each have different ideas on how to leverage his device. "How many different [applications] do you have on your iPhone? Probably 30 or 40," he says. "Glass is a computer just like your iPhone or your laptop, and we are going to see a lot of interest from different departments and they are all going to have their own apps."

In fact, one of the challenges Samani has run into when consulting with health care providers is just limiting the scope of the conversation. "It is very easy to dream. We say O.K., hold on there. Glass is new. Let's start with this," he says.

Another challenge is that the laws regarding telemedicine vary from state to state, and some of these laws prevent devices like Glass from being used to their full potential, explains Samani. For

instance, he notes that in Texas, where Pristine is based, providers can only be reimbursed for telemedicine visits if they have already seen the patient in person at least once. “Telemedicine laws are better than they were a couple of years ago when they were abysmal, but they are still pretty poor overall in terms of support,” adds Samani. “The reality is that when you go state to state, the laws are very arbitrary, and that is frustrating.”

Porter adds that administrators and providers interested in this type of innovation will also likely face political challenges. “Most organizations are in transition right now as health care has brought about many administrative changes; IT departments are generally converting to some newer version of the electronic medical record and are extremely busy, budgets are tight, and most managers are risk-averse,” he explains. However, with supportive management, these political hurdles can be overcome, adds Porter. ■

SOURCES

- **Steven Horng**, MD, MMSc, Emergency Provider, Beth Israel Deaconess Medical Center, Boston, MA. E-mail: shorng@bidmc.harvard.edu.
- **Paul Porter**, MD, Emergency Physician, Lifespan, Providence, RI. E-mail: pporter@lifespan.org.
- **Kyle Samani**, Cofounder and CEO, Pristine, Austin, TX. E-mail: kyle@pristine.io.

Study: One-third of patients with BSIs receive inappropriate therapy

New research suggests that as many as one in every three patients with a bloodstream infection is given therapy that is not appropriate. The findings, published in the journal *PLOS ONE* on March 18, 2014, cite ineffective antibiotics as well as growing drug resistance, and the high prevalence of *S. aureus* bacteria is among the chief challenges facing community hospitals in their treatment of bloodstream infections, which are a leading cause of death and suffering in the United States.¹

In an effort to better understand the types of bloodstream infections that are found in community hospitals, the researchers gathered data on patients seen in community hospitals in Virginia and North Carolina between 2003 and 2006. They then focused in on 1,470 of these patients who had bloodstream infections.

More than half of these infections (56%) were health care-associated, although symptoms began before patients were admitted to the hospital. Another 15% of the infections began while patients were in the hospital. The researchers found that 29% of the infections were acquired in the community and unrelated to medical care.

The most common pathogen responsible for these infections was *S. aureus*, which was found in 28% of the infections, followed by *E. coli*, which was found in 24% of the patients. The researchers found that multidrug-resistant pathogens were present in 23% of the patients, representing an increase over previous studies. Of these, methicillin-resistant *S. aureus* (MRSA) was the most common pathogen involved.

The researchers point out that the findings illustrate that the types of bloodstream infections found in community hospitals are similar to those seen in tertiary care centers, dispelling the misconception that community hospitals don't commonly see the more serious types of infections. However, the researchers found that 38% of the patients who presented to a community hospital with a bloodstream infection were initially prescribed an antibiotic that was not effective against their infection.

The patients most likely to receive an ineffective antibiotic included patients who were in a hospital or nursing home within the past year and patients with impaired function and/or multidrug-resistant pathogens. Consequently, researchers advise clinicians to consider these risk factors

COMING IN FUTURE MONTHS

- Novel approach to expediting care to stroke patients
- Lessons from Washington state on ED utilization
- New step in the battle against HAIs
- Utilizing community health workers in the ED

when prescribing antibiotic therapy for bloodstream infections. Further, they note that one way to improve prescribing would be to develop an intervention that prompts electronic medical records to automatically alert providers to these risk factors when they are selecting antibiotic medications.

The researchers note that 250,000 bloodstream infections occur each year, costing an estimated \$37,000 per patient. However, most of the research that has been done to date on bloodstream infections has occurred at tertiary care centers rather than community hospitals. ■

REFERENCE

1. Anderson DJ, et al. Bloodstream infections in community hospitals in the 21st century: A multicenter cohort study. *PLoS One* 2014 March 18. [Epub ahead of print]

To reproduce any part of this newsletter for promotional purposes, please contact: *Stephen Vance*

Phone: (800) 688-2421, ext. 5511

Fax: (800) 284-3291

Email: stephen.vance@ahcmedia.com

To obtain information and pricing on group discounts, multiple copies, site-licenses, or electronic distribution please contact: *Tria Kreutzer*

Phone: (800) 688-2421, ext. 5482

Fax: (800) 284-3291

Email: tria.kreutzer@ahcmedia.com

Address: AHC Media, LLC
One Atlanta Plaza
950 East Paces Ferry Road NE, Suite 2850
Atlanta, GA 30326 USA

To reproduce any part of AHC newsletters for educational purposes, please contact:

The Copyright Clearance Center for permission

Email: info@copyright.com

Website: www.copyright.com

Phone: (978) 750-8400

Fax: (978) 646-8600

Address: Copyright Clearance Center
222 Rosewood Drive
Danvers, MA 01923 USA

CNE/CME INSTRUCTIONS

HERE ARE THE STEPS YOU NEED TO TAKE TO EARN CREDIT FOR THIS ACTIVITY:

1. Read and study the activity, using the provided references for further research.
2. Scan the QR code below, or log on to www.cmecity.com to take a post-test; tests can be taken after each issue or collectively at the end of the semester. *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 last test of the semester, your browser will be automatically directed to the activity evaluation form, which you will submit online.
5. Once the evaluation is received, a credit letter will be sent to you.



CNE/CME OBJECTIVES

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

CNE/CME QUESTIONS

1. **Mark Rosenberg**, DO, MBA, FACEP, FACOEP-D, likens the emerging trend toward the creation of geriatric EDs to what happened with respect to _____ a generation ago.
A. chest pain units
B. assisted living facilities
C. intensive care units
D. pediatrics

2. Rosenberg also states that in his own setting, there have been many improvements in care for senior patients, but one particularly obvious stride is that clinicians are doing a much better job of diagnosing which condition that is commonly misdiagnosed in the senior population?

- A. cases of delirium
- B. cases of malnutrition
- C. dementia
- D. sepsis

3. Through structure and organization, the newly released Geriatric Emergency Department Guidelines emphasize three main areas: staffing, follow-up, and _____, according to **Timothy Platts-Mills, MD**.

- A. pharmacology
- B. transitions of care
- C. fall prevention
- D. care environment

4. One new study notes that many of the tenets of geriatric medicine are also applicable to the care of patients with complex needs, especially with respect to care transitions. For instance, **Alicia Arbaje, MD, MPH**, notes that the main lesson that comes out of geriatrics is:

- A. the importance of communicating in terms the patient can understand
- B. the notion that care requires a team effort
- C. the idea of taking a holistic approach
- D. the importance of including family in the care plan

5. **Steven Horng, MD, MMSc**, one of four emergency providers at Beth Israel Deaconess Medical Center in Boston, MA, who has been piloting the use of Google Glass, says BIDMC sees Glass as:

- A. another platform to deliver the ED information system
- B. a way to streamline workflow
- C. a mechanism for enabling more face time with the patient
- D. a step forward in terms of communications within the ED

6. Horng also states that BIDMC's biggest priority in implementing the Glass application has been to:

- A. ensure that the device improves rather than impedes workflow
- B. ensure that patients are not distracted by the device
- C. ensure safety and privacy
- D. ensure that the device is cost effective

EDITORIAL ADVISORY BOARD

Executive Editor: James J. Augustine, MD

Director of Clinical Operations, EMP Management
Canton, OH

Assistant Fire Chief and Medical Director
Washington, DC, Fire EMS

Clinical Associate Professor, Department of Emergency Medicine
Wright State University, Dayton, OH

Nancy Auer, MD, FACEP
Vice President for Medical
Affairs
Swedish Health Services
Seattle

Kay Ball, RN, PhD, CNOR, FAAN
Perioperative Consultant/
Educator
K & D Medical
Lewis Center, OH

Larry Bedard, MD, FACEP
Senior Partner
California Emergency
Physicians
President, Bedard and
Associates
Sausalito, CA

Robert A. Bitterman
MD, JD, FACEP
President
Bitterman Health Law Con-
sulting Group
Harbor Springs, MI

Richard Bukata, MD
Medical Director, ED, San
Gabriel (CA) Valley Medical
Center; Clinical Professor of
Emergency Medicine, Keck
School of Medicine,
University of Southern
California
Los Angeles

Diana S. Contino
RN, MBA, FAEN
Senior Manager, Healthcare
Deloitte Consulting LLP
Los Angeles

Caral Edelberg
CPC, CPMA, CAC, CCS-P, CHC
President
Edelberg Compliance As-
sociates
Baton Rouge, LA

Gregory L. Henry, MD, FACEP
Clinical Professor
Department of Emergency
Medicine
University of Michigan
Medical School
Risk Management Consultant
Emergency Physicians
Medical Group
Chief Executive Officer
Medical Practice Risk
Assessment Inc.
Ann Arbor, MI

Marty Karpel
MPA, FACHE, FHFMA
Emergency Services
Consultant
Karpel Consulting Group Inc.
Long Beach, CA

Thom A. Mayer, MD, FACEP
Chairman
Department of Emergency
Medicine
Fairfax Hospital
Falls Church, VA

Larry B. Mellick, MD, MS, FAAP, FACEP
Professor of Emergency
Medicine
Professor of Pediatrics
Department of Emergency
Medicine
Georgia Regents University
Augusta

Robert B. Takla, MD, FACEP
Medical Director and Chair
Department of Emergency
Medicine
St. John Hospital and
Medical Center
Detroit

Michael J. Williams,
MPA/HSA
President
The Abaris Group
Walnut Creek, CA

ED Management

2014 Reader Survey

In an effort to learn more about the professionals who read *ED Management*, we are conducting this reader survey. The results will be used to enhance the content and format of *EDM*.

Instructions: Fill in the appropriate answers. Please write in answers to the open-ended questions in the space provided. Either fax the completed questionnaire to 404-492-5933, or return it in the enclosed postage-paid envelope. The deadline is **July 1, 2014**.

In future issues of *EDM*, would you like to see more or less coverage of the following topics?

A. more coverage B. less coverage C. about the same amount

- | | | | |
|--|-------------------------|-------------------------|-------------------------|
| 1. Benchmarking/Best practices | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C |
| 2. Clinical topics | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C |
| 3. EMTALA | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C |
| 4. The Joint Commission | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C |
| 5. Morale | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C |
| 6. Patient satisfaction | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C |
| 7. Overcrowding/patient flow/ reducing delays | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C |
| 8. Reimbursement | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C |
| 9. Risk management/liability risks | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C |
| 10. Staffing | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C |
| 11. Technology | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C |
| 12. HIPAA compliance/privacy | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C |
| 13. Staff education/in-service | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C |
| 14. Other. Please list: _____ | | | |

Please rate your level of satisfaction with the following items.

A. excellent B. good C. fair D. poor

- | | | | | |
|---------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| 15. quality of newsletter | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D |
| 16. article selections | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D |
| 17. timeliness | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D |
| 18. length of newsletter | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D |
| 19. overall value | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D |
| 20. customer service | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D |

21. On average, how many people read your copy of *EDM*?

- A. 1-3
 B. 4-6
 C. 7-9
 D. 10-15
 E. 16 or more

22. Do you plan to renew your subscription to *EDM*?

- A. yes
 B. no If no, why not? _____

23. How would you rate your overall satisfaction with your job?

- A. very satisfied
 B. somewhat satisfied
 C. somewhat dissatisfied
 D. very dissatisfied

24. How would you describe your satisfaction with your subscription to *EDM*?

- A. very satisfied
 B. somewhat satisfied
 C. somewhat dissatisfied
 D. very dissatisfied

25. What is your title?

- A. Chairman
 B. Director of emergency services
 C. Nurse manager
 D. ED physician
 E. Other _____

26. To what other publications or information sources about ED management do you subscribe?

27. Including *EDM*, which publication or information source do you find most useful, and why?

28. Which website related to your position do you use most often?

29. Please list the top three challenges you face in your job today.

30. What do you like most about *ED Management*?

31. What do you like least about *ED Management*?

32. What are the top three things you would add to *EDM* to make it more valuable for your money?

Contact information
