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With diminished funding for mental health (MH) services in Pennsylvania, patients with MH or substance use concerns have been presenting to area EDs, explains Michael Turturro, MD, FACEP, the chief of emergency services at the University of Pittsburgh Medical Center (UPMC)-Mercy in Pittsburgh, PA. “Over a two-to-three year period, while our overall volume in the ED went up by about 20% to 25%, the volume of patients presenting for MH and/or addiction issues requiring inpatient care went up by more than 300%.”

As budget cuts forced the closing of area facilities that had been

EXECUTIVE SUMMARY

To manage a big spike in demand from patients seeking emergency care for mental health (MH) and addiction medicine concerns, staff from the University of Pittsburgh Medical Center-Mercy and Western Psychiatric Institute and Clinic of UPMC have devised a series of interventions aimed at quickly linking these patients with the care and resources they need. The most visible intervention is the addition of embedded crisis workers in the ED who help patients with MH or social needs navigate to more appropriate community resources.

- In just one year, the time it takes for a detox patient to be seen in the ED has decreased from one hour to less than 15 minutes, and the time it takes for a patient to be admitted to a detox unit has gone from about 20 hours to six hours.
- The percentage of patients admitted for MH or addiction medicine concerns has declined as staff have been able to apply inpatient resources more appropriately.
- Administrators say the hospital’s clinical decision unit, which had been serving as a holding tank for the crush of MH and addiction medicine patients awaiting inpatient beds, can now be used for its intended purpose, for medical issues related to patients evaluated and treatment in the ED.

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providing inpatient and outpatient care to MH patients, the situation at UPMC-Mercy reached a crisis stage by the summer of 2012. “Our ED became overburdened and overcrowded, with behavioral health and detoxification patients lining the hallways since we were one of the few facilities still providing both of those services,” observes Turturro. “In 2009 ... we had 2,150 visits for BH

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Editorial Questions

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and addiction medicine. In 2012 we had nearly 7,000 visits.”

Hospital administrators as well as faculty and staff from Western Psychiatric Institute and Clinic of UPMC were all focused on the problem, but they realized that meaningful solutions were going to require a more comprehensive view, explains Turturro. “We pulled all of the stakeholders together to try looking at this as a community and as a region rather than as an individual hospital or an individual health system,” he says.

This collaborative approach produced several interventions that have succeeded in not only easing some of the pressure on the ED, but also in reducing wait times and lengths-of-stay (LOS). Further, patients with MH or addiction-related issues are being linked with the kind of care and resources that they need in a much more expeditious fashion, observes Turturro.

Such swift progress in tackling an increasingly complex set of issues has attracted the attention of Urgent Matters, a national initiative funded by the Robert Wood Johnson Foundation, which recently presented to UPMC its Emergency Care Innovation of the Year Award.

Enlist assistance of crisis workers

One of the most visible changes that has been implemented in the ED is the addition of front-line workers who essentially triage patients who have presented with MH or addiction needs. “These are workers from an outpatient, mobile crisis center [called re:solve] who we have hired to work for us,” explains Turturro. “What these people do is work with patients to determine if their needs require hospitalization or if they primarily have social needs that are exhibiting themselves in a MH-kind of a complaint.”

The re:solve workers are primarily bachelors-level clinicians who have demonstrated abilities to perform MH-crisis services, explains Ellie Medved, RN, MSN, vice president of ambulatory services at Western Psychiatric Institute and Clinic. “They maintain their crisis identity, so they are still part of the crisis program,” she explains.

Patients are always evaluated by emergency providers first to take care of any medical needs and perform medical screening exam; however, many of these patients still have social or BH issues that need to be addressed. In these cases, the emergency provider will hand the patient off to one of the crisis interventionists to work with them, notes Medved.

“What we wanted to do was some type of intervention that would expedite that ED visit, but then also give the person some tools or resources that might prevent future presentations to the ED,” says Medved. “So the emergency staff will identify the person, and then the crisis program staff will work with the individual while [he or she] is in the ED to help him or her transition back to the community.”

For instance, there might be a housing or transportation issue, or there might be a need for long-term outpatient treatment, observes Medved. “The [crisis interventionists] take a problem-identification-and-solving type of approach in the ED to get the person linked up with whatever they might need that brought them to the ED,” she says.

Leverage community resources

The crisis interventionists are well-versed in what resources are available in the community because this type of knowledge is a backbone of the region’s crisis program. “We have to know what is out there, and we have made hundreds and hundreds of visits to different community services, whether they involve housing, shelters, food banks, formal or informal treatment providers for behavioral health, spiritual organizations, or law enforcement,” explains Medved. “This is one of the reasons why we keep the [ED-based crisis interventionists] as part of the re:resolve staff — so they can maintain the integrity of, and stay linked with, the program.”

When the crisis interventionists work with patients, they don’t create a typical ED discharge plan; it’s more of a game plan for how the person can get through their crisis, adds Medved. “They’re not doing treatment planning, and they’re not focused on diagnosing,” she says. “They’re focused on what the person’s presentation is, and what kinds of skills and strengths they have to help them get through [their current crisis.]”

For instance, it is very common for people who have MH or substance abuse problems to come to the ED when they need some type of intervention because the ED is one resource that is readily available, notes Medved. “Knowing that people seek intervention in the ED when they are feeling really lousy, we wanted to put an intervention in there that they could access,” she says. “The idea is to give people skills and tools that can prevent them from having to rely

on ED services, and train people on how to use community services.”

The roll-out of the approach in the ED, which began in January of 2013, went smoothly, which was a bit of a surprise to Medved. “I thought it would be bumpier than it was, but interestingly enough, the emergency staff and [the crisis interventionists] found their way working together,” she says. “The ED staff have embraced the crisis workers because EDs are busy places, and all hands are appreciated.”

Further, ED providers understand that the types of issues that the crisis interventionists deal with are typically not addressed in the ED, so they are relieved to have the added resource, notes Medved. “It is frustrating when a person comes in and you can’t address all of the issues that you see before you,” she says. “The crisis interventionists can pick up on all of those issues.”

An added bonus is that there is evidence that the crisis interventionists and emergency staff are picking up valuable techniques and information from each other. “Sometimes the emergency staff are expediting cases on their own because they have learned about a resource that they can share with a patient who doesn’t need to be with a crisis worker,” says Medved. “They are building off of each other’s skills.”

There are usually one or two crisis interventionists working in the ED, depending on patient volume. “Their schedules are based on the ED’s peak times and days of the week when the ED sees the most patients requiring behavioral health intervention — typically evenings and weekends,” adds Medved.

Begin discharge planning sooner

Along with the addition of the crisis interventionists, hospital administrators have also made some other internal changes aimed at speeding throughput and meeting the surging demand for MH services. For example, to free up inpatient beds, the discharge planning process now begins as soon as a MH patient is admitted. “In the past, the common scenario was that someone would be ready for discharge, but needed to go to some type of environment between the hospital and home, and would have to wait several days for that [placement] to occur,” explains Turturro. “We have now been able to facilitate that in a much more timely manner, which has created inpatient space.”

The hospital has also instituted protocols that essentially get MH patients through their inpatient stays more quickly, adds Turturro.

Further, on the addiction medicine side, the hospital has worked with community partners to make sure that inpatient beds are preserved for those patients who are too sick to be detoxed in outpatient settings. For example, most patients requiring opioid detox services can be managed through an outpatient protocol handled by an outpatient rehabilitation center or an ambulatory detoxification program unless they are at risk for medical decompensation, observes Turturro.

Such steps have eased pressure on the ED because BH and detox patients are no longer lining the hallways while they wait for inpatient space. “The only patients we were boarding were psych and detox patients, and our clinical decision unit, which was meant to be used as an extension of the ED, had basically turned into a holding tank for patients who were too sick to leave because they were waiting for a detox or a MH bed,” he says. “The clinical decision unit is now being used as it was intended.”

In just one year, the interventions UPMC put in place have produced identifiable benefits. The time it takes for a detox patient to be seen in the ED has decreased from one hour to less than 15 minutes, and the time it takes for a patient to be admitted to a detox unit has gone from about 20 hours to six hours, explains Turturro.

“We are tracking the number of people who come in with a BH or addiction chief complaint ... and we track the number of admissions,” he says. “What we are finding is that since we have put these interventions in place, the percentage of patients who are admitted has declined since we are applying that inpatient resource a little more appropriately.”

Reach out to other hospitals, health systems

How much of what UPMC has done is generalizable to other hospitals? It’s a question Turturro has pondered quite a bit in recent months. He notes that while every site is going to have its own unique challenges and solutions, there are some lessons other health systems can borrow from the UPMC experience. For example, Turturro advises hospital administrators to take steps toward breaking down the competitive walls that exist between different health systems, and try to approach the demand for MH

services as a community. “If everyone pools their resources together, you will find there are gaps that can be filled by one system that may not be present in another system,” he says.

Further, Turturro advises hospital administrators to thoroughly investigate what resources are available in their regions. “Until we started looking, we really didn’t know how much we had within our community and within our county on the outpatient side that was really being under-utilized,” he says. Find a way to tap into all the group homes, detox clinics, half-way houses, and other resources that can help patients get to the point where they can function independently in the community, he says.

To take this one step further, efforts are underway in Pennsylvania to create a statewide database of available beds for MH and addiction medicine so that placement can be found quickly for patients who need these services. “Maryland instituted a voluntary statewide database for these types of beds, and it is being used by about half of the hospitals. It has been useful to frontline clinicians,” says Turturro. Such a resource is particularly valuable when you have patients who you cannot discharge because it would be too unsafe, but the ED is not appropriate for the level of care that they require either, adds Turturro.

Many hospital systems may find that they can leverage area crisis services in much the same way that UPMC has done, but Medved encourages hospital and ED administrators to explore all of their options. “If you have a hospital that does not have behavioral health, you really have to start that conversation with a provider to learn about the various levels of care in behavioral health that are available,” she says. “In our situation, and I think in many situations, crisis services make the most sense, but there may be other types of individuals or program staff that make sense in your ED.”

One other important recommendation is to be sure to reach out to payers to insure that they will support what you plan to do with MH, adds Medved. “Early on we connected with our payers and regulators just to make sure they were aware of what we were doing and that we had their support to move forward,” she says.

It is still too early to predict how health care reform will impact UPMC’s MH interventions, but Medved would not be surprised to see demand for MH services increase. “People who didn’t have access to this before may have access to it now. There may be new people in the system trying to

learn how to navigate services,” she says. “When those types of things happen, you usually see a spike in the use of crisis services, so that may be the case, but it is too soon to tell.” ■

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Hospitals leverage nursing staff, IT tools to reach out to patients following discharge from the ED

Administrators use early feedback to gauge patient satisfaction, drive improvement

It makes sense that patients might have a higher opinion of their experience in the ED if someone contacts them soon after discharge to see how they’re doing. But there is new evidence that these post-visit contacts can deliver other important benefits as well, improving clinical outcomes in some cases and reducing 30-day post-discharge admissions.

What’s more, some pioneering hospitals are finding more efficient ways to both carry out the contacts and maximize the information they receive from patients. Take, for example, the experience of Edward Hospital in Naperville, IL, a facility that has dutifully initiated post-ED visit contacts in one form or another for more than a decade.

Beginning in 2004, the hospital hired a dedicated clerk to initiate the callbacks, using automatic phone dialing software and prepared scripts. “I created a database, a very basic one, which pretty much would keep track of the patients the clerk needed to call,” explains Tom

Scaletta, MD, FAAEM, chairperson and medical director of Emergency Services at Edward Hospital and Health Services. “Then we came up with a set of questions so she would go through the list, gathering information, and whenever she encountered an issue, she would relay it to the appropriate person.”

For instance, if the clerk uncovered a clinical issue, she would contact the charge nurse; in other cases, patients might just need help maneuvering through the health care system or getting a follow-up appointment, notes Scaletta. “She helped out, the patients really appreciated it, and I think it improved care as well,” he says.

Administrators say the callbacks, which went to patients discharged from the hospital as well as the ED, helped the organization sustain healthy patient satisfaction scores in the 95%-99% range, according to Press Ganey surveys. However, having a dedicated person on hand to make the calls is expensive, so for the past several years Scaletta has been working with computer programmers to create alternative ways to interact with patients following their ED visit.

“What I have been working on is trying to see how many patients we could actually reach where they would fill out a self-assessment,” explains Scaletta. And what he has found is that many patients actually prefer communicating via e-mail or text.

EXECUTIVE SUMMARY

Hospital and ED administrators have found that initiating patient contact shortly after discharge from the ED can positively impact patient satisfaction while also offering opportunities to improve patient compliance with care instructions and to intervene early if complications arise. While some hospitals still rely on manual calls to patients, others are initiating contact through email and text messages.

- Edward Hospital in Naperville, IL, has implemented a five-question self-assessment that is electronically conveyed to patients the day following discharge. The system provides patients with the opportunity to report any medical concerns, rate their caregivers, and report any complaints about their experience in the ED. Clinical concerns can be acted on immediately, but administrators also use the feedback to drive improvement in patient satisfaction.
- Cheyenne Regional Medical Center in Cheyenne, WY, has a process in place to prompt the nursing staff to make manual calls to patients between 24 and 48 hours after discharge from the hospital or ED. The approach is credited with curbing readmissions and helping to boost patient satisfaction by more than 30% in the first quarter of 2012.

“They don’t want the phone to ring and to go running for it. They would rather get an e-mail or a text message, and to reply to it when they are ready,” he says. “I think sometimes you actually get more thoughtful responses too, because when the phone rings people may just say everything is fine or they may just unload and not give a very thoughtful response.”

Hybrid system collects feedback

The hospital hasn’t abandoned the manual callbacks, but the way the system works now, these calls are reserved for those patients who do not respond by e-mail or text message. “We are currently getting about a 30% rate of response by text message. It is actually outpacing e-mail right now,” notes Scaletta.

Typically, patients will receive a text and/or e-mail one day following their discharge from the ED, explains Scaletta. The message contains five questions, beginning with a query about how they are feeling. Patients then indicate that they are better, the same, or worse than the day they presented to the ED. When patients indicate that they are worse, the system automatically sends a fax to the ED and an e-mail message to the medical director so that they stay aware of the problem, explains Scaletta. “[Emergency staff] might call and check on the patient, they might ask the patient to come back, or they might just ask him or her some questions,” he says. “This is the most critical question.”

The second question asks the patient whether he or she has any questions regarding home care, medications, or follow-up appointments. If the patient answers in the affirmative, then an e-mail is generated to a hospital case manager who will then follow up, says Scaletta.

Questions three and four ask the patient to rate the level of concern shown by the physician and the nurse who took care of him or her in the ED. The possible answers range from very high (5) to very low (1). “We can sort our physicians and nurses out every single month by who is doing a better job,” explains Scaletta, noting that administrators then share the findings with clinicians.

The clinicians understand that the expectation is that at least half of their patients will rank them as showing a “very high” level of concern, observes Scaletta. “They know they might become an outlier if they are not trying harder ... so that really boosts patient satisfaction,” he

says. “If 75% of the time I can achieve a very high score there, that will differentiate me from a physician who is only getting 50% or 25%.”

Conversely, when patients report a very low score for a clinician, the computerized system prompts them to explain what the problem was, and an e-mail message is automatically sent to the medical director or nurse director, adds Scaletta.

The fifth and final question on the self-assessment provides patients with an opportunity to report any other comments or concerns they may wish to share about their experience in the ED. “This is where we might find out that the room was dirty, it was too cold, or the patient was placed in the hallway,” explains Scaletta. “Whatever the issue is, it creates an opportunity to address complaints.”

When these types of issues are reported, the department involved is notified electronically, but the system also generates an apology to the patient. “This way the patient feels like he has a voice and has been heard, and that in itself — that complaint resolution module — also boosts satisfaction and improves loyalty,” observes Scaletta. “You can take a negative to a positive when patients realize they are being listened to.”

Low-performers can be coached

Some clinicians take low scores or reported complaints personally — especially when the criticism is undeserved, acknowledges Scaletta. “[A clinician] might have done everything perfectly, but even so, there is going to be a certain amount of [dissatisfaction] in any service industry,” he says. “There are going to be your chronic complainers, where even though you have done a perfect job, they are going to complain, and that is what I call noise. Everyone gets a certain amount.”

To cut down on this type of noise, administrators simply avoid asking some patients to rate their clinicians. For instance, the hospital reliably gets complaints from patients who are identified drug-seekers, observes Scaletta. “We don’t send them a request to find out what they thought about the physician or the nurse because we know it is going to be noise,” he says. “Every day is going to be the worst day of their life ... and the physician didn’t give them narcotics because they were flagged.”

Even with such noise, however, higher-performing clinicians tend to like the patient

feedback, says Scaletta. “They know this is an important aspect of health care delivery because when you engage patients, they are more likely to listen to instructions and get better,” he says.

The clinicians who are low performers can be coached or given tools to help them improve, notes Scaletta. However, if their scores remain on the low end, they might not be a good fit, he says.

Scaletta credits the post-ED visit contacts with fortifying the ED’s high patient-satisfaction levels, but he also believes they have played a role in bringing down admissions from the ED. “There are patients who are clearly going to be admitted and there are patients who are clearly going to go home, but there are also some patients in the middle who some physicians might admit and some others might send home,” he says. “There is no right answer, but with a system in place that can check on patients the next day, I think that moves the needle just a little bit so that some physicians might be more comfortable [sending some of their patients home].”

Scaletta acknowledges that working with computer programmers to build the electronic system was expensive, but he is hoping to eventually recoup those costs by making the system available to other hospitals. For the time being, however, Edward Hospital is serving as the first test hospital for the approach.

Manual callbacks make an impact

Another hospital reaping benefits from post-ED visit and post-admission contacts is Cheyenne Regional Medical Center (CRMC) in Cheyenne, WY. While the practice has clearly made a positive impact on patient satisfaction surveys, administrators say they have also helped to improve patient compliance with care instructions, and the approach has made a dent in preventable readmissions.

Cheryl Crumpton, MSN, RN, CEN, the orthopedic-neurosurgery service line coordinator, oversaw the roll-out of the patient callback program at CRMC, beginning in June of 2011. “Here at our facility we require the RNs to make the calls, so hopefully they’re the people taking care of the patients and they already know a little bit about their instructions and can answer more medical or medication questions than other staff would be able to do,” she explains.

The calls are scheduled to go to patients between 24 and 48 hours post-discharge so that their care instructions are still fresh in the minds, notes Crumpton. “Our goal is to call 100% of our ED patients,” she says. “It has been shown that if you actually reach and talk to 50% of those patients, that is a very successful number to make a difference in care and clinical outcomes.”

Every day, the charge nurse compiles a daily assignment sheet, dividing up the calls that need to be made among the nurses working in the ED that day. “We see about 120 patients per day, so one nurse can’t possibly call all those patients, so we split it up so that each nurse has between 10 and 15 calls to make a day, and they can prioritize their day however they want to in order to get those calls accomplished.”

Crumpton acknowledges that it took time for the nurses to get used to making the calls. At first, they were allowed to come into work a little early or to stay a while beyond their shifts to get the calls completed, but with time, the nurses have become more adept at working the calls into their regular hours. “Each call only takes three to five minutes on average, so they are able to complete their calls pretty quickly,” she says. Also, on days when a nurse is falling behind on the calls or is experiencing a particularly busy day, the charge nurse will step in and make some of the calls.

During the calls, the nurses ask the same types of questions that Edward Hospital uses on its post-ED visit self-assessment forms. In this case, the nurses have a script to follow, and some of the calls are followed by a patient satisfaction survey, explains Crumpton.

Success stories win buy-in

Given that the callbacks are an added task for nurses in a very busy environment, ED administrators interested in adding this type of program should anticipate some staff resistance. “There is always a little bit of pushback, but typically once you identify a couple of quality issues that you have helped to resolve with the callbacks, and you present those to staff, they pretty quickly understand the reasons for why we do them,” says Crumpton.

For example, nurses completing the callbacks have uncovered several instances in which patients were taking their medications at the wrong doses, and they’ve been able to intervene in cases in which

patients were experiencing treatment complications. “We had one woman who was treated for a brown recluse spider bite, and when we did a callback on here, her arm had gotten increasingly worse and she had a big, tunneling wound,” says Crumpton. “The emergency nurse was able to direct her to the nearest ED and literally saved the woman’s arm,” says Crumpton. “When you take these cases back to staff, you are able to impress upon them why the callbacks are so important and what their contributions are to identifying these types of things.”

Each ED needs to document its own success stories because these will generate a lot of buy-in, adds Crumpton. Improvements on key metrics can win over staff as well. At Cheyenne Regional Medical Center, where the callbacks go to both inpatients who have been discharged and ED patients, patient satisfaction jumped by more than 30% in the first quarter of 2012, and the hospital also saw a reduction of 13.59% in 30-day readmission rates post-discharge over 12 months.

Even with this kind of success, though, Crumpton has found that it is important for administrators to continuously reinforce why the callbacks are important. She also observes that there should be some type of mechanism in place to document that the calls have been made, and what transpired during the calls. “The program we use is automated, so we are able to track when the patients were called, what their answers were, how many patients were called, and which nurses made the calls,” she says.

For accountability purposes, it is also important for administrators to actually observe staff making the calls on occasion, advises Crumpton. “You want to make sure they are quality calls,” she says. “Sometimes when you call a patient, he has some concerns. You have to be able to actually address those concerns and to be able to listen and do some service recovery right there.”

For instance, if a patient had to wait a long time to be seen, or his experience with a member of the emergency staff was not optimal, the callback nurse needs to apologize and reassure the patient that his complaint has been heard and that the issue will be followed-up on, notes Crumpton.

Another important skill that can be invaluable to the callback nurses, says Crumpton, is the so-called “teach back” method, in which you essentially ask patients to recount their own care instructions in order to verify that they understand what they need to do in terms of taking their medicines correctly, changing their wound dressings, or when to follow-up with their physician, for example.

When patients have very detailed instructions upon discharge, the ED nurses actually encourage them to write down any questions or concerns that crop up so they can review these with the callback nurse when she gets in touch.

Crumpton has found that information gleaned from patients during the post-discharge phone calls can help clinicians improve their own processes. For example, nurses on the hospital’s same-day surgery unit discovered during these calls that once patients got home following a surgical procedure, they often did not understand when to change a dressing on a wound or when it was important to call the physician, she explains. “As a result, they created these big, bright fluorescent yellow packets of wound care instructions,” says Crumpton. “They changed their practice because the staff identified a problem and then they owned their solution.” ■

SOURCES

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Text message program improves outcomes, decreases ED utilization among ED patients with poorly controlled diabetes

Leverage mobile phones to reach disadvantaged patients with limited access to primary care

Emergency providers are generally not trained or well-positioned to provide chronic care management to patients. However, they often must deal with the consequences of poorly managed chronic diseases when patients present with urgent or emergent complications. It’s a frustrating situation, especially when the same patients keep coming back to the ED for problems that could

have been prevented through better management of their chronic diseases.

Emergency providers who commonly serve disadvantaged populations are especially familiar with the medical consequences of uncontrolled diabetes. “We see the implications of this on every shift,” explains **Sanjay Arora, MD**, an associate professor of emergency medicine at the Keck School of Medicine at the University of Southern California in Los Angeles. “We have people coming in with highly avoidable complications such as diabetic feet, amputations, and blindness, which, with any kind of regular primary care, could have been avoided.”

Many of the patients who present to the ED with these problems lack access to primary care either because of financial or time constraints, says Arora. “When the clinics are open, they are working, which prompts them to come to the ED seeking care that we are not really equipped to provide,” he says. “We see everyone regardless of insurance status, but the flip side of that is that we can’t be expected to do everything. We can’t provide primary care, we can’t provide education. It is not because we don’t want to. It is just that we don’t have the time.”

EXECUTIVE SUMMARY

Diabetic patients who lack access to primary care tend to frequent the ED, often with complications from their disease that could have been prevented with proper management and education. To get around the problem of access, researchers tested an automated program that continuously delivered educational messaging via text to a group of patients who presented to the ED with poorly controlled diabetes. After six months, researchers noted improvements in Hb A1c levels, self-reported medication adherence, and ED utilization when compared with a control group. And the impact was particularly noteworthy among Latinos, according to the researchers.

- The text messaging program, dubbed TExT-Med, was developed by four physicians and two diabetes educators. The messages were delivered daily, and contained educational as well motivational content derived from the National Diabetes Education Program. There were also medication reminders, healthy living challenges, and trivia questions about diabetes.

- At six months, Hb A1c levels decreased by 1.05% in the intervention group, compared to 0.60% in the control group, and self-reported medication adherence improved from 4.5 to 5.4 (as measured on an 8 point scale) in the intervention group versus a decrease of 0.1 in the control group.

- During the six-month study period, 35.9% of patients in the intervention group presented to the ED for care, as compared to 51.6% of patients in the control group.

Deliver education via text

To get around the problem, Arora and colleagues decided to test the impact of a program that delivered at least some of this important disease management information to patients via a series of automated mobile text messages (mHealth) transmitted over a six-month period. The program, called TExT-MED (Trial to Examine Text Message Based mHealth in ED Patients with Diabetes) included daily messages that were either motivational or instructional.¹

For example, a text message might tell patients that controlling their blood glucose, blood pressure, and cholesterol can lead to a longer life, or the message might instruct patients to eat more fruits, vegetables, beans, and whole grains, and to consume less salt and fat. The program also included three medication reminders per week, and there were two so-called healthy living challenges sent to patients each week. These might instruct patients to avoid drinking any soda or juice that day or to examine food labels to find a snack that contains fewer than 100 calories. In addition, patients received two trivia questions per week, derived from the National Diabetes Education Program materials. Answers to the trivia questions were disseminated via text message one hour following the questions.

“The thought behind this was let’s try picking a technology that we know all of these patients have and are comfortable with ... and try to teach them the things that we would all like to teach them, but don’t have the time to do,” says Arora. “We thought we could do it equally well via an automated text-messaging program that wouldn’t take up any of the physician’s time.”

The program, which was developed by four physicians and two certified diabetes educators, was prepared in both English and Spanish versions. The stated goals of the effort were to improve glycemic control, promote self-care behaviors, and to augment self-efficacy.

Because this was a randomized, controlled trial, research assistants were on hand in the ED at the test site: Los Angeles County Hospital at the University of Southern California, a large safety-net facility, serving more than 170,000 low-income patients each year. The research assistants tested the baseline knowledge of study participants, and they assessed their quality of life and level of self-care. They also had to obtain informed consent, so there was a process in place to get patients enrolled.

However, Arora notes that in the real world, engaging patients in this type of program could be as simple as having a poster on the wall explaining the program, or handing patients a piece of paper with a phone number they can call to activate the text-messaging program. “Our research has shown that even in low-income populations, the vast majority of patients are already on unlimited text messaging plans,” he says.

Further, Arora notes that automated mobile health interventions of this nature tend to be very inexpensive if they are done on a large scale. “We are talking pennies per message, which is a very small charge,” he adds. “What we have here is a very hard-working and considerate Latino population who suffer a disproportionate burden of diabetes. They have twice as much diabetes as their white counterparts, and so it just seemed morally like a good thing to do for our patients.”

Consider culture, understanding

Researchers identified a total of 128 patients to participate in the trial. They all had glycosylated hemoglobin (Hb A1c) levels that were equal to or greater than 8% — an indication of poorly controlled diabetes. Patients randomized to the control group received usual care, and patients randomized to the treatment group received usual care plus the daily text messages sent to their mobile phones. The messages were delivered in either English or Spanish, depending on the patient’s preference.

At six months, the researchers report that Hb A1c levels decreased by 1.05% in the intervention group compared to 0.60% in the control group. Further, self-reported medication adherence improved from 4.5 to 5.4 (as measured on an 8 point scale) in the intervention group versus a decrease of 0.1 in the control group.

The text messages also appeared to have an impact on ED utilization. The researchers note that during the six-month study period, 35.9% of patients in the intervention group presented to the ED for care, as compared to 51.6% of patients in the control group.

Interestingly, the magnitude of improvement on all of these outcomes was greater among Latinos than patients of other ethnicities — a finding that does not surprise Arora. “They tend to be the ones who are most disenfranchised in our system because of cultural discordance and language discordance with providers,” he says. “This [program] was all culturally competent. We put it

through multiple iterations of focus groups, and worked with the local community to make sure that the standard version of this was on point — they would get it, they would relate to it, and they would understand it. I don’t think they ever received much education like this before.”

Engage family, friends

Since the trial, the intellectual property rights to the TExT-MED program have been purchased from the University of Southern California by Nashville, TN-based Agile Health, LLC, which is further developing the approach. The program now includes more messages and more personalization, explains Arora. “It also has some more advanced keyword functionality where there can be some automated interaction between the program and the patient,” he says. “It is enhancing that feeling of physician-patient contact without actually having the physician involved, which is what makes the program so scalable.”

Further, Arora and colleagues have just commenced a second trial, testing the impact of another text-messaging program that is designed for the friends and family of patients with diabetes.

“We are going to be giving diabetic patients the same TExT-Med curriculum, but then also having them identify a family member, friend, or someone in their social network who they think will have the biggest impact on their health,” says Arora. “These people won’t get the same messages, but they will get mirrored messages tailored to help them encourage their brother, sister, father, or friend to take their medicines today or help them go for a walk, so it is involving the family.”

Arora emphasizes that the text-messaging programs are not trying to be a surrogate physician or to offer any kind of medical advice. Rather,

COMING IN FUTURE MONTHS

- New ways to leverage paramedics
- What to do about emergency provider burnout
- Palliative care in the emergency setting
- Frontline providers begin to hear from the newly insured

the goal is to put diabetes and medical care on the radar screen of people who are typically more concerned with keeping their jobs and bringing home a paycheck, he says. "It is to get their heads continually focused on [the fact] that this [disease] isn't going away, they need to deal with it, and it needs to move up on the ladder [of priorities]," observes Arora. "Then eventually, hopefully, they will get into primary care and they won't need the program anymore." ■

REFERENCE

1. Arora S, Peters A, Burner E, et al. Trial to Examine Text Message-based mHealth in Emergency Department patients with diabetes (TEXT-MED): A randomized controlled trial. *Ann Emerg Med.* 2013 Nov 5. [Epub ahead of print].

SOURCE

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CNE/CME QUESTIONS

1. One of the most visible changes that has been implemented in the ED at the University of Pittsburgh Medical Center-Mercy Hospital to handle surging demand from patients with mental health (MH) needs is:
 - A. the addition of nurse practitioners to expedite screening exams
 - B. the addition of front-line workers who work with these patients after they have been evaluated
 - C. a new waiting room for psychiatric patients
 - D. a separate entrance for patients seeking MH services
2. According to, **Ellie Medved**, RN, MSN, when crisis interventionists work with patients in the ED, they create:
 - A. a traditional discharge plan that patients can follow when they get home
 - B. a back-up plan for patients if they feel the need to seek emergency care again soon after discharge
 - C. a game plan for how patients can get through their crisis

D. all of the above

3. According to **Tom Scaletta**, MD, FAAEM, what response rate is the hospital currently receiving from the patients who receive self-assessment forms by text following discharge?

- A. 95%
- B. 75%
- C. 50%
- D. 30%

4. Scaletta explains that the most critical question on the patient self-assessment form asks the patient:

- A. how he or she is feeling
- B. to rate the level of concern shown by their physician
- C. to report any concerns about their experience in the ED
- D. whether they have any questions regarding home care, medications, or follow-up appointments

5. According to **Cheryl Crumpton**, MSN, RN, CEN, information gleaned from patients during post-discharge phone calls can:

- A. give administrators feedback on clinician performance
- B. generate ideas that can be passed on to the marketing department
- C. help clinicians improve their own processes
- D. pin-point problems that need to be dealt with

6. The stated goals of a study on the impact of a text-messaging program on patients who presented to the ED with poorly controlled diabetes were to:

- A. improve glycemic control
- B. promote self-care behaviors
- C. augment self-efficacy
- D. all of the above

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