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Bring cutting-edge 'MedTeams' concepts to your ED: Novel program eliminates errors, cuts liability risks

Would you like to cut your risk management cases in half and reduce medication errors that lead to unwanted outcomes? A unique project is underway that has produced convincing data to accomplish exactly that. The MedTeams project applies behavioral science techniques, used for aviation safety, in the ED.

"The idea is to increase efficiency, avoid errors, and improve patient satisfaction. This tool will revolutionize the way we practice emergency medicine." says **Matthew Rice, MD, FACEP,** medical corps chief at the department of emergency medicine at Madigan Army Medical Center in Tacoma, WA, and one of the program's developers.

Ten EDs implemented cutting-edge techniques and then collected data on employee satisfaction, errors, turnaround times, and complaints. "This has tremendous potential impact for ED managers," says **Dallas Peak, MD, FACEP,** clinical assistant professor of emergency medicine at Methodist Hospital in Indianapolis and a physician investigator for MedTeams. "The parameters we focused on are foremost on every manager's mind."

A curriculum was developed based on the concept of reducing errors through teamwork. "We specifically aimed the curriculum at errors that commonly occurred in our respective institutions, and developed ways to circumvent these through proper teamwork skills," says Peak. The impact of teamwork training on errors was dramatic, he adds.

The MedTeams concept is different from traditional efforts to improve efficiency and reduce costs, such as re-engineering, reorganization, and workforce reduction, stresses **Jorie Klein, RN,** president of the Society of Trauma Nurses. "Hospitals are paying consulting fees to 'right size' the workforce and develop service excellence programs," she notes. "These processes often create a fragmented infrastructure for the providers." They don't address how the medical team works together, argues Klein. "MedTeams' focus is on the medical team's response, structure, communication, situation awareness, and team review," she says. "The outcomes of MedTeams implementation are a decrease in medical errors, increased efficiency, improved resource utilization, and improved patient satisfaction."

Complete cultural change

Madigan Army Medical Center's ED has undergone a complete cultural change after implementing MedTeams, says Rice. "Within the past two years of training, we have been able to solve problems that have frustrated us for years," he reports. "We've gone from having a high turnover of personnel, patients who aren't as happy as they should be, and risk management cases being higher than we'd like, to a culture that's much more focused on solving problems as a team."

Patient complaints have steadily decreased since the project's inception, notes Rice. "Up until a year ago, we had between six and 10 complaint letters a month," he says. "For the past several months, we had three letters, and there has been a steady downward trend over the last two years."

Staff turnover has also decreased. "Our clerks, who are the lowest paid people, would turn over regularly, and we had trouble recruiting nurses and medics," says Rice. "Now, people usually leave because they are moving, not because they are dissatisfied with the job itself. These improvements are measurable and specific."

Risks reduced by half

The 10 EDs involved in the project conducted a review of all malpractice and risk management claims during the past eight years. The results were tabulated and analyzed. "This was a very interesting part of the study in itself, and represents one of the largest malpractice/risk management studies done to date," notes Peak.

The findings showed dramatic results for those EDs enrolled in MedTeams, Peak reports. "The preliminary results for the project show an 80% decrease in observed errors in the experimental group, and no change in the control group," he says.

Although the actual number of errors that were avoided is impossible to know, the results are clearly significant, says Rice. "However, we estimate that we reduced our risk management cases by 50%," he says.

The number of cases identified as potential lawsuits, or actual lawsuits filed, has decreased by half, Rice notes. "According to the National Patient Safety Foundation, as many as 10% of bad outcomes are related to physician/medical errors, and I think team training helps reduce those errors," he says.

Savings of $4 per ED patient

To determine reduction of risks, the MedTeams researchers spent hundreds of hours observing ED providers nationwide, says **Robert Simon, EdD,** chief scientist for the crew performance group at Dynamics Research Corporation in Andover, MA. "Then we quantified things in a more systematic way by looking at closed cases at a number of participating hospitals," he explains. "We looked to see if there was a teamwork technique that had been in place, would it have avoided or at least mitigated the error?"

The retrospective study indicated that, of 4.7 million patient visits in this retrospective study, there were 68 closed cases during that eight-year period. "Twenty-nine of them were judged to involve teamwork failures, and the average settlement was $560,000 per lawsuit," Simon notes. "What that means is of the total amount of indemnity costs, $3.45 of every visit could have been eliminated if people had been trained in teamwork skills."

That figure factors heavily in the average annual medical malpractice costs for an ED physician, says Simon. "Depending on where the physician practices, their average malpractice cost per patient is about $2-6. So $3.45 is a very significant number."

Teamwork training could result in significant cost reductions, emphasizes Simon. "Based on error reductions occurring now in the hospitals and other efficiency cost savings, we are conservatively estimating that hospitals will be able to save at least $4 per patient," he says. "Therefore, EDs that see 20,000 patients a year should realize about $80,000 in cost avoidance the first year, and the same amount of savings every year thereafter."

The average number of risk management and malpractice cases is estimated as high as one for every 20,000 visits, notes Rice. "So with our volume, we would expect 4-5 cases per year on average," he explains. "However, we've only had one case in two years and that was relatively minor. We probably have one of the lowest risk management rates anywhere, as a result of this training."

Eventually, insurance premiums will be reduced as a result. "Avoidance of errors and enhancing provider-patient communication are two things insurance companies want to look at," says Rice. "These things make a big difference relative to claims, so they will appropriately

COMING IN FUTURE MONTHS

- Use protocols to boost patient satisfaction
- Identify nurses and physicians at risk for substance abuse
- Update on on-call physician crisis

adjust premiums based on these risk management issues."

Here are some concepts from the MedTeams project to implement in your ED:

Increase communication between physicians and nurses. "For the first time, we have doctors and nurses talking directly with one another and sharing ideas and information," says Peak. "Our department has around 50 beds and saw 84,000 patients last year. We have a residency program and train other service's residents as well as medical students. So there may be as many as 10 physicians seeing patients at any given time."

Communication was the weak link in the ED's system, Peak acknowledges. "It was entirely possible for a physician to see a patient, write orders, obtain results, and release the patient, [while] having never spoken to a nurse," he says. "MedTeams has changed how we do business. The team structure promotes a much closer collaboration of physicians and nurses."

Effective communication is the "lifeline" of medical teams, Peak emphasizes. "Everyone is working together and it's not the old game of 'the docs vs. the nurses' that we used to play," he says. "Our department is also physically large and geographically divided. So MedTeams enables us to change from running one big, inefficient department to running three smaller, more efficient ones."

Physicians can focus on optimizing patient flow when there are fewer patients to manage on their team, says Peak. "The nurses also help out by staying in better contact with the physician leader for their team," he explains.

Keep all staff members informed. "We insist there be some way in the ED to achieve broad situational awareness," says Simon. "Some EDs do this with status boards, others have clever ways of moving charts around, or attach colored flags to charts. However you choose to do it, there needs to be a system so that other members of the team can get a quick update on what is going on. One or two people should not be holding all the keys."

Communicate with frequent team meetings. Routine team meetings ensure that plans don't slip off track and that details are not missed, says Peak. "The nurses know what the physicians are waiting on and can keep patients informed. Likewise, the nurses can provide crucial information to the physicians that affects their decision making," he explains.

Frequent team meetings resolved the problem of prolonged stays in the ED on admitted patients, says Peak. "In some cases, a physician would forget to submit a bed request. Four or five hours would pass until someone would ask, 'why is that patient still here?' and track down the problem," he explains. Now a system of built-in checks through team meetings and a better sense of "ownership" for the team's patients reduces delays.

Too often, a situation with a patient is only known by one or two staff members, Simon notes. "It's important to occasionally huddle up at the status board to share what is going on with a patient," he says. "Staff may feel they are too busy for that, but status meetings last only 30 seconds or a minute."

After having a status meeting, staff are able to conduct the next hour much more effectively, Simon explains. "The staff should know what a physician has in mind. For example, will the patient be admitted or discharged from the ED?" he says.

Such simple pieces of information can impact several nursing activities, says Simon. "There is no more guesswork on the nurse's part," he adds. "They may have thought the patient had just a tummy ache, but it turns out that the doctor thinks there is cardiac involvement, or vice versa. Those things need to be verbalized."

Ensure administrative support. "There are really two essential elements: a 'grassroots' desire to improve the system, and administrative support and supervision for the project," says Peak.

Staff enthusiasm for the team concept is key, says Peak. "Our staff had a strong feeling that something needed to be done, and MedTeams was embraced as a solution for some of our problems," he explains. "However, some of these ideas represent challenges to the old way of doing things. So they require some extra effort to get started."

Supervision from administration helps to keep the process going in its early stages, notes Peak. "The project also needs some victories," he says. "People want to see visible signs that it's working at some level."

Do an end-of-shift review. "When there are saves, you have to give staff credit in real time," says **Gregory Jay, MD, PhD, FACEP,** director of emergency medicine residency research at Rhode Island Hospital in Providence. "The best way to do this is with an end-of-the-shift review—to go over where the team succeeded or failed."

End of shift reviews should be done in 2-4 minutes, Jay advises. "Work loads are onerous and will continue to be with managed care, and people have to get home. So it needs to be brief," he says. "There is no other opportunity in very busy clinical settings to provide that kind of feedback. We can provide administrative feedback, but how many memos can they write? In the trenches, we know how many errors are occurring because we see them all the time."

Avoid finger pointing. Instead of pointing a finger at an individual, the emphasis is shifted to team successes and failures. "When something doesn't go perfectly, we say the team failed, rather than identifying the person who caused this to happen," says Rice.

The goal is to move away from "blaming and shaming," says Simon. "Instead, take the approach of asking, 'this is what happened, now what can we learn from it?'" he suggests. "We assume people are trying

to do their best, and other things get in the way, such as problems with communications and systems."

Discuss team saves at M&M conferences. "Historically, the purpose of these conferences is to identify team failures, not successes," Jay notes. "Now we talk about saves that are clearly attributed to teamwork. It is important to highlight near misses where the team recovered."

Invite nurses to attend M&M meetings. "Prior to this, nurses never came to the conference," says Jay. "Now we make it a point to have them there, especially for the cases they are involved with." Discussions are lively, and result in a much richer understanding of the case, he notes.

Nurses can help decipher the record, says Jay. "Prior to that we had only the physician's opinion, but now we have another piece of historical insight about what happened. As a result, teamwork failures are more easily identified," he explains.

Stress collaboration between nurses and physicians. "For too many years, nurses and physicians have been practicing on parallel tracks, never mingling or crossing with one another, only communicating when they really have to," says Jay. "There is an opportunity for far more communication to occur, and safety issues are a key part of that."

Be prepared for a lengthy implementation. "This is a work in evolution, not something that happens overnight," says Jay.

Full scale implementation of MedTeams concepts can take a year or more, Jay reports. "Most of the effort does not go into training the teams. Most goes into implementing and keeping concepts alive after people are out of the classroom," he adds.

Clinicians who are task-oriented may view team concepts as additional work, notes Simon. "It may seem like team responsibilities are making their lives more difficult," he says. "Ultimately, physicians and nurses are better connected with people they work with and enjoy their jobs more, but that takes time because it's not the way they were trained."

The rationale behind MedTeams is easy to grasp, but putting it into everyday practice takes work, says Peak. "We have only begun to see the full effect of MedTeams in this regard. Changing habits takes time and effort. We have to constantly remind one another of our goals for effective communication."

Focus on the patient's needs instead of tasks. "ED nurses and physicians are task oriented. The focus is on the next most important thing to do, and so forth," says Simon. "MedTeams teaches people to switch their focus to patient needs."

Identify and break error chains. "We contend that medical misadventures or errors rarely happen over a period of five or 10 seconds. They happen over weeks, months, or years," says Simon. "Things have unfolded to make it possible for an error to happen. We call that an error chain."

The goal is to find ways to break the error chain, notes Simon. "Team coordination is an economically efficient way to break the error chain," he says. "Sometimes systems just don't work. For example, a lot of drugs have similar sounds, and dosages get lost in the fray of language in a busy ED. We can break that chain by having people check all verbal medical orders. That simple check in the system prevents an error going further."

Bad outcomes are rarely the result of a single error, Rice stresses. "For example, a patient is supposed to go to surgery and have his or her left leg amputated. First, the physician inadvertently writes 'amputation of right leg.' Then, somebody comes in and prepares the right leg for surgery. Next, the anesthesiologist looks at the note and never talks to the patient. Finally, the patient's right leg is prepped and removed," he explains.

The error begins at one point, then people fail to stop it, says Rice. "Perhaps they are afraid to challenge a person, or think that it's not their job," he notes. "The way to break that chain is to give people responsibility for the patient themselves. Don't assume that the staff physician knows better than the medic who spots something wrong."

Acknowledge the frequency of human error. "There is not a single pilot in aviation who wakes up and says, 'I am going to fly a perfectly good airplane in the ground.' Likewise, there is not a single nurse or physician who wakes up and says, 'I'm going to screw up today,'" says Simon. "ED staff are well intentioned, highly trained, caring human beings in a complex environment, and they make mistakes. People are error prone, but there are ways to self-correct that."

Defensive reactions to being challenged or corrected are detrimental to patient care, says Simon. "In the past, people would feel as if they are not being trusted, but that's not the case," he explains. "If you're going to have a high reliability of self correcting, you must first acknowledge that people make mistakes all the time."

Physicians should welcome challenges, says Simon. "At first, doctors may feel that nurses are trying to tell them what to do, but it will actually make them more safe," he stresses. "An additional piece of information may save them from a lawsuit, so the physician's own self-interest is served."

Don't start project at the wrong time. "We don't want hospitals to undertake a MedTeams program in the middle of a huge downsizing, renovation, or restructuring, because people can't feel threatened if you're going to effect this kind of change," says Simon. "There needs to be some stability and security for this to work."

Link teamwork to evaluations. "Ensure that these

concepts are part of people's practice by linking their performance as a team member to their evaluations," Simon recommends. "Use very well defined areas, such as 'is there cross monitoring?' That way, people aren't judged against an unknown standard."

Plan for occasional refresher courses. "Because we're talking about a 'sea [of] change,' we found that one or two refresher courses conducted several weeks or months later reinforced this. That way, new people coming in are introduced to these," says Rice.

Encourage staff not to say 'that's not my job.' "Team members must help other team members. We are all responsible for patient care," stresses Rice. "In the past, nurses might say, 'that's the physician's job' or vice versa. Now it's everyone's responsibility to take care of an issue when it arises."

Identify specific teams. As part of the MedTeams program, every person working in the ED, from clerks to staff physicians, are assigned to specific teams, Rice explains. "You may have 30 people taking care of 300 patients a day. We have set up a visual identification system, so personnel know at any time who they are working with."

The system is color-coded. "A staff physician may wear a yellow arm band, and physician wears purple scrubs, and nurses either blue or green scrubs," Rice notes. "Those individuals on the team have multiple meetings during a work shift. For instance, the team may get together right after 7 a.m. to talk about problems which came up in the previous shift."

Even the patient is made a member of the team. "If a patient is assigned to a green bed, they have a sticker placed on their shoulder, and someone explains that they are on the green team," says Rice. "The patient is told, 'you and the other patients are the most important part of our jobs. If you need help, ask for anyone on the green team.' This gets patients involved in their own care."

Every single staff member needs to be an advocate for the patient. "They need to be assertive without being inappropriate, and understand the responsibility that goes along with that," says Rice. "This is not a prescription for mutiny against chain of command. It's allowing staff to have some authority in bringing changes to the surface. But there still needs to be a decision made by the person in authority." ■

Proven, error-reducing approaches—Try them in your ED

"There are several specific techniques taught by MedTeams that cause errors to [be] diminished," notes **Matthew Rice, MD, FACEP,** medical corps chief at the department of emergency medicine at Madigan Army Medical Center in Tacoma, WA. Here are several MedTeams concepts that have been proven to reduce errors:

- **Checkbacks.** The "checkbacks" system is used by pilots and flight crews to ensure effective communication and minimize errors, explains **Dallas Peak, MD, FACEP,** clinical assistant professor of emergency medicine at Methodist Hospital in Indianapolis and a physician investigator for MedTeams. "In MedTeams training, we stress that all verbal orders are to be acknowledged verbatim. This will minimize the possibility for errors," he says. "The order-giver has a chance to hear what was said and correct a misstatement, while the order-receiver ensures the accuracy of what he or she heard."

  Repeating medication orders is normally only done by nurses, says **Gregory Jay, MD, PhD, FACEP,** director of emergency medicine residency research at Rhode Island Hospital in Providence. "Physicians should be checking with someone as well," he stresses. "We teach that when a med is drawn up, the person drawing it up needs to 'check back' that the dose is correct. If the person who ordered the dose isn't there, you need to 'check it back' with someone else, another physician or nurse. The goal is to eliminate medication errors."

  At Madigan's ED, the nurse is required to repeat the order out loud so it's clear what the physician actually wanted, notes Rice. "We have had several cases where bad or less than ideal outcomes or medication errors were avoided because of the 'checkbacks,'" he reports.

  Techs have alerted nurses or physicians to certain situations that in the past they may have ignored because they weren't included, Rice says. "The techs have notified people about circumstances that were changing," he explains.

  Physicians believed that one patient with chest pain had no cardiac involvement, recalls Rice. "The tech left with the patient was made aware of our concerns, but quickly picked up on the patient's subtle complaints of back pain," he explains. "The tech brought this to the nurse's attention and brought the physician to the bedside. At that point, the patient became bradycardic. If the tech had waited until the patient started to turn bad, there could have been less than an ideal outcome."
- **The two-challenge rule.** "This is one of the most effective empowerment tools I've ever seen," says Peak. "Whenever a team member questions a decision, that team member has a responsibility to seek resolution. In fact, they may seek two 'challenges,' first with the person who is directing them, and then take it to a superior."

  The two-challenge rule encourages a permissive

atmosphere, notes Rice. "If even the newest, least empowered people see something wrong, they have permission and an actual responsibility to challenge that in a professional way," he says. "At that point, they will either correct a potential error or be educated as to why they were mistaken, so they are a better provider."

In army aviation, if a helicopter pilot is flying directly into a mountain, the pilot who is not on the controls is taught to verbally challenge the action, explains Peak. "The pilot on the controls is supposed to respond. If he doesn't give a response or gives a nonsensical response, the other pilot is supposed to challenge him again. If he gets no answer or an irrational answer, that pilot is then authorized to take over the controls," he says.

The same concept applies to the ED. "The whole point is to move the welfare of the mission or the patient, onto the whole team," says **Robert Simon, EdD,** chief scientist for the crew performance group at Dynamics Research Corporation in Andover, MA.

The key to this concept is that the responsibility lies with the person who perceives the problem, says Peak. "They are empowered to supersede rank or traditional hierarchy in order to resolve the issue," he explains.

However, MedTeams stresses the value of professional respect. "The two-challenge rule may seem disrespectful to some physicians," says Peak. "But human fallibility is a fact of life. If another medical professional has a concern, that concern should be addressed, regardless of their relative level of professional training."

A nurse may challenge a plan to send a stroke patient to CT scan when the patient was deteriorating and required intubation, Simon explains. "That doesn't mean the doctor has to agree. The physician may say, 'The patient may appear to be deteriorating, but I know she is stable, so let's move on.' We are not trying to take authority away from people. We are trying to help them make better decisions."

The two-challenge rule was formally implemented into the ED's policy and procedures. "The fact that we're a teaching facility and our providers are open to new ideas has allowed us to easily integrate this into our daily practice," says Peak.

At Madigan, an ED physician ordered Reglan, an antiemetic, when he actually wanted to give the patient Namidadine for ulcers. A nurse caught the error, and challenged the order. "In that case, there may not have been a bad outcome, but the patient would have gotten the wrong medicine," notes Rice.

Challenging physicians may initially ruffle some feathers, notes Simon. "We are not a school for mutiny, and know physicians are responsible for the clinical progress of patients through the ED. We're not trying to subordinate that, but at the same time, everybody is responsible for the patient," he says.

Cross monitoring. This is a powerful mechanism to reduce the error rate, advises Simon. "A nurse in a busy ED asked a physician, can a patient with NSAID allergy take Alleve? The attending physician answered yes, but another nurse asserted that Alleve is NSAID. By doing that, a potential injurious dose was avoided," he says.

As many as half the serious adverse events in EDs could have been caught by someone who was in the area, stresses Simon.

The concept is to take responsibility for the patient, Simon explains. "If you hear that a patient has been administered an IV that you think is contraindicated, then you have to speak up. You can't just go on to your next task," he says.

Advocacy and assertion. If a resident physician routinely orders IVs for intermediate patients, a nurse

What is MedTeams?

"We tell students that in some ways, MedTeams is the most difficult course they'll ever take, because it questions the fundamental ways you conduct yourself," says **Robert Simon, EdD,** chief scientist for the crew performance group at Dynamics Research Corporation in Andover, MA. "We are not just a consulting firm that comes in and promises to fix things."

The MedTeams curriculum is comprised of an eight-hour module with the following five steps:

1. Decide what team structure the ED needs. "A lot of work needs to be done ahead of time at a facility to assess how they do things," explains **Matthew Rice, MD, FACEP,** medical corps chief at the department of emergency medicine at Madigan Army Medical Center in Tacoma, WA. "Then we coordinate teams that organize the general flow and support the core team that sees the patients. Vignettes and video clips demonstrate the ways they can work together."

2. Identify problem-solving strategies. "We discuss the different decision making processes in medicine and how they are different in emergency medicine," says Rice.

3. Communicate with the team. "We focus on how, in the ED, things such as different perceptions of words can be very important when communicating between a clerk and a doctor," says Rice.

4. Execute plans and managing work load. "We give examples of how to delegate tasks and assume responsibility for issues even outside of your work area," Rice explains.

5. Improve specific team skills with practical examples. Exercises allow people to interact on a practical basis. ■

may question the practice, Simon explains. "The nurse may state that it increases the patient's length of stay, increases the cost, makes patients uncomfortable, and possibly also causes complications," he says. "After a discussion, the physician modifies his practice of routinely ordering IVs."

However, the key is to teach people ways to present these things to one another in nonthreatening, nonpersonal ways, Simon stresses. "The nurse would approach the physician and say, I notice you are ordering IVs for all patients in this area. I think when we do that, it increases our workload as nurses quite a bit," he explains.

Avoiding accusatory tones is key, says Simon. "If a nurse talks to a physician in terms of what behavior do we want to change, and why, then they can discuss it from there," he explains. "The idea is not to berate or correct another provider in front of a patient. If that occurs, the provider needs to explain, 'When you reprimand me in front of patients, I lose credibility, and we are not performing effectively as a team.'" ■

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Current status of project

The progress of the MedTeams research is currently being observed by the American College of Emergency Physicians (ACEP) and the Society of Trauma Nurses (STN). "We are in the beginnings of discussions to create an arrangement whereby ACEP and STN will be responsible for the distribution of the MedTeams systems, concepts, and training ," reports **Robert Simon, EdD,** chief scientist for the crew performance group at Dynamics Research Corporation in Andover, MA. (The title of the currciculum is "Emergency Team Coordination Course".)

If that occurs, ACEP and STN would contract with Dynamics Research Corporation (DRC), the organization that coordinated the research and development of the program, to service and periodically update the MedTeams materials, Simon explains.

MedTeams will accomplish the final round of data collection this month, notes Simon. "In August of this year, 6-10 hospitals will participate in a "beta test" of MedTeams to ensure that organizational aspects and infrastructure are in place," he explains.

Assuming that the results of the validation testing and the beta testing are positive, the MedTeams ED curriculum should be commercially available to hospitals beginning in the first quarter of 2000.

Although MedTeams is specifically adapted for emergency medicine, the concept will eventually expand. "Our vision is to export this to other parts of the hospital, such as the OR and ICU. Just as in the ED, in those areas you have a high stress environment, and decisions need to be made quickly, often with incomplete information," explains **Matthew Rice, MD, FACEP,** medical corps chief at the department of emergency medicine at Madigan Army Medical Center in Tacoma, WA. ■

ED Spotlight on New Technologies

Communicate with bone conduction

Cutting-edge bone conduction technology can enhance the results of MedTeams training, says **Robert Simon, EdD,** chief scientist for the crew performance group at Dynamics Research Corporation in Andover, MA. "One of the major problems with care in the ED is staying in touch with one another," he notes. "Being able to ask questions without having to find an individual staff member would be valuable, so we are studying bone conduction technology."

Bone conduction technology consists of a headset that attaches [like] earphones, but the ears are not obstructed. A battery powered communication system is hooked to users in the ED. Physicians can still use stethoscopes because their ears are free, and no microphone blocks the user's mouth.

"You can talk to anybody at any time, in a very quiet way," says **Matthew Rice, MD, FACEP,** medical corps chief at the department of emergency medicine at Madigan Army Medical Center in Tacoma, WA. "We can communicate with other people on our team efficiently and quietly."

It can be difficult to keep a team together in a busy ED, says **Gregory Jay, MD, PhD, FACEP,** director of emergency medicine residency research at Rhode Island Hospital in Providence and one of the device's designers. "In addition to using techniques such as 'checkbacks,' and maintaining situational awareness, a little technol-

ogy can help the team be more cohesive," he adds.

Technology should only complement changed behaviors, says Jay. "The technology should not come first. The improvement in behavior has to come first," he stresses. "Otherwise, it just becomes a new type of dysfunctional system."

Bone conduction headsets are a proprietary technology produced by a Japanese company, Jay reports. "This could result in a quantum leap in efficiency and safety," he says. "The very significant errors you hear about are not result of single error, but a series of tiny errors that lead up to a big error."

"One of those tiny errors may be that the patient has a fever," says Jay. "Of course the nurse will document that on the sheet, but there is no guarantee that the physician is going to look at that before the patient is discharged, and that piece of information may change things." The bone conduction headsets make it much easier for a change in a patient's status to be communicated, he explains.

The technology works in tandem with all the MedTeams concepts, Rice stresses. "This is going to come a long way in having ED staff feel intimately connected and that they are working together as a team," he says. "Staff will have the comfort of being able to instantly communicate."

Effortless communication will result in staff being more likely to raise issues about patient care, says Rice. "Staff will be able to ask questions and bring up issues which they may not have in the past. So we may potentially avoid more errors because people will feel more accessible," he explains.

The technology will have a major impact on efficiency, Rice predicts. "There is no doubt in my mind that this device is what is necessary to take a significant leap into the future of how we practice emergency care," he says. "There are improvements not only in our ability to communicate, but also in getting tasks accomplished. This also relieves a fair amount of physical exertion in getting around."

However, the technology should not be forced into an inefficient system, says Rice. "To try and make it work when you don't have the efficiencies necessary in human behaviors, is the wrong way to do things," he advises. "Don't use technology to try and change behaviors. Instead, use the opposite approach. Change behaviors and then enhance that with technology."

A prototype system is currently being tested at Madigan's ED. "There are still some glitches we need to work out, but the system works well," Rice reports. "I would say there is a 30-40% improvement in ability to communicate with people using this technology."

The prototype will be refined over the next few months, says Rice. "The technology was set up with a lot of forethought to make it user friendly, but after some refinements it will eventually take only a few minutes of training, as opposed to an hour or two," he predicts. Over the next 12 months, the product is expected to be upgraded twice, and become commercially available within two years.

Currently, the [headsets] are not used 24 hours a day. "Because of some limitations on battery life, we can't use it 24 hours a day yet, so we tend to use it on certain shifts," says Rice. "We are working on ways to have a rechargeable battery fitted into the system instead of one battery with limited life. We also plan to add more channels, and enhance the aesthetics of the system so it looks even less obtrusive."

The ED is collecting data on the [headset's] effectiveness. "We compare the shifts when the [headset] is used and not used," says Rice. "Staff answer a questionnaire on how communication went, so we can compare [results] with and without it."

Currently, 10 headsets are used by ED staff to expeditiously move patients throughout the system, says Rice. They are distributed between the staff physician, the senior resident, team physicians, charge nurse, triage nurse, staff nurses, and clerks.

Here are several ways the headsets are being used at Madigan's ED:

Communication between charge and triage nurses. "We have about 30 yards between where the charge nurse and triage nurse have their specific worksites," Rice says. "When there are bursts of activity, the triage nurse asks for help or asks what beds are available so patients can go directly there," he explains."

Previously, the triage nurse had to walk back and forth to accomplish these tasks. "Thirty yards doesn't seem very far until you have to walk it a couple of dozen times a day," says Rice. "This way, the nurse can push a button and talk to the person directly in a confidential way."

Physicians and nursing staff can share concerns about patient needs. "We have 24 beds, and the physician is going to be somewhere taking care of a patient. So if a question arises, the nurse or physician need to track each other down physically or overhead page them," says Rice.

"This way, you turn a knob, push a button, and can instantaneously communicate with the person," says Rice. "You have almost instant communication with the person you need, without the patient being able to hear what the conversation is about. You also don't have to spend time tracking them down."

Transferring calls. Phone calls can be transferred directly to a staff member, so they don't have to go to the phone. "The system has a component that transmits the digital phone signal i-nto the infrared system, and then transfers the phone call through to the location where the individual is to receive the call," says Rice.

The system works essentially like a portable phone, but more efficiently. "You can talk on the phone with the calling party from wherever you are located. That saves a lot of time with physicians running to the phone and returning to their work site," says Rice.

Placing orders. "Orders can be instantly placed between the physician and the clerk who does the ordering," says Rice.

Prehospital care. "There will be some efficiencies with prehosptial care. Currently, we don't have this rigged into our bay station calls, but eventually we will be able to do that," Rice says. "Of the 30-40 ambulance calls we receive every day, we will be able to assign a physician to a specific channel so they can transmit information to prehospital providers, rather than having to come to radio to respond. That way, one person won't have to go back and forth between the work area and bay station."

Observation unit. "We have some efficiencies here, because the nurse that staffs the observation unit doesn't have to come out and look for a doctor when they need orders," says Rice.

Lab and x-ray. "There is a potential to tie in our lab and x-ray folks where they are included in the system and can call and ask questions to a particular provider without having to call them on the phone. That would save a little time for everybody," says Rice. ■

Update on EMTALA and managed care: HCFA issues special advisory bulletin

The Office of Inspector General (OIG) and Health Care Financing Administration (HCFA) published a proposed Special Advisory Bulletin designed to address requirements of EMTALA and managed care, focusing on the obligations of hospitals to screen all patients seeking emergency services and provide stabilizing medical treatment to enrollees of managed care plans if their condition warrants it.

"This appears to be the initiative that the OIG was talking about, which they said was forthcoming," says **Steven Frew, JD,** a Rockford, IL-based health care consultant and attorney. "By asking for comments, the clear intention is to gather data and support for that position. If the data supports their general direction, we can expect significant changes."

However, the bottom line for compliance with EMTALA still falls squarely on the hospital's shoulders, notes **Stephen Dresnick, MD, FACEP**, president and CEO of Sterling Health Care Group in Coral Gables, FL. "Clearly, EMTALA was directed at hospitals and not at managed care plans, and this bulletin doesn't change that," he says. "Unfortunately, there will still be issues with managed care plans and willingness to pay EDs for services rendered."

Here are key issues raised in the bulletin and how they could affect your ED:

Possibility of revised regulations. The next step will probably be supplemental regulations to the 1994 federal regulations, which would have the effect of holding managed care plans accountable, says Frew. "One major change would be raising the ban on preauthorization from a guideline to a regulatory level," he says. "This would raise it to higher level of enforceability."

Ban on preauthorization. "I expect we are headed for a flat out ban on preauthorization, which would put all retrospective pay denials under a lot of scrutiny," says Frew. "Currently, some states ban preauthorization and ban retrospective denials of prudent layperson visits. But most of those states are having problems with managed care plans and payers still trying to duck those rules."

For instance, the Balanced Budget Act, which passed more than a year ago, banned prior authorization and retrospective denials for Medicare and Medicaid patients, notes Frew. "But it was phased in when new contracts are written, so a lot of organizations just did not write new contracts," he says. "Others flat out ignored the change in the law. Some payers simply will attempt to get away with as much as possible."

"We will begin to see state initiatives to mandate that managed care plans pay for ED visits," predicts Dresnick. "What seems like a simple issue is in fact complex and needs to be attacked at both the state and federal levels," he explains.

MCOs are under the gun for fraud and abuse. Right now, hospitals are the only ones at risk for following managed care requirements, Frew notes. "But this would shift the burden more equally to MCOs," he predicts. "The bulletin is, in effect, saying you can't ask hospitals to violate EMTALA, or we'll get you for fraud or abuse."

MCOs could be held accountable through fraud and abuse regulations, Frew explains. "To issue a fraud alert in that way, the OIG would not have to go through the same procedures as pursuing it through the regulations," he says. "The OIG is reputed not to be happy with the failure of The Patient Rights Act in Congress. They are looking to make regulatory changes with managed care, but they may start out by pursuing fraud alerts."

The fraud and abuse regulations are another route to hold MCOs accountable. "The preauthorization requirements of managed care have the effect of putting financial pressure on hospitals to violate EMTALA. Offering

either a positive or negative inducement for the hospital to violate the federal regulations is one of the definitions for fraud and abuse," says Frew.

In effect, MCOs are offering hospitals a negative incentive to violate the law, says Frew. "Saying to a hospital, 'you do this and violate EMTALA or you don't get paid' would fall within the scope of the general definition of Medicaid fraud and abuse," he says. "Even if the individual patient is not a Medicaid participant, it adversely affects the entire delivery of care."

Increase in litigation. "Civil actions based on EMTALA violations appear to be increasing slightly, although not nearly as fast as administrative activity," says Frew. "A recent Supreme Court decision will have the effect of generating more litigation from discharges of hospitals. The solicitor general in the arguments in that case told the Supreme Court that HCFA was going to look at regulatory applications now that would deal with the inpatient setting under EMTALA."

Using EMTALA as the basis of malpractice lawsuits is not appropriate, says Dresnick. "The original intent was to prevent patient dumping onto county hospitals," he notes. "The bulletin will help ensure this won't be misinterpreted or misused in the future. It's gotten out of hand when a patient files an EMTALA violation after being hospitalized for three months."

New bargaining power. The HCFA bulletin can help you negotiate contracts, Dresnick says. "Our group has, for some time, insisted that clauses be included which state that preauthorization for payment or treatment is not indicated when patients are seen pursuant to federal or state law," he explains. "So we have not had this problem to any great extent, because we have not allowed MCOs to put us in that position. But problems do exist, and this bulletin is helpful for anybody to understand as they judicate claims or negotiate their contracts."

"The clarification will not be in the areas of what hospitals should be doing now, because that is already in place. They simply cannot make preauthorization calls, end of discussion," Frew explains. "But it would give hospitals new bargaining power in the event they ban preauthorization across the board or ban dual staffing."

Dual staffing controversy addressed. The advisory bulletin raises concerns about the dual staffing arrangement in which the hospital permits the MCO to station its own physicians in the hospital's emergency department, separate from the hospital's own emergency physician staff, for the purpose of screening and treating MCO patients who request emergency services.

In a dual staffing setting, two separate physician groups provide care, possibly using different policies and protocols, performing different procedures, using different referral practices and drug formularies, relying on different on-call physicians, and having different credentials.

"Historically, HCFA has have hinted that they consider this an inherently unequal treatment, which only exists for the purpose of skimming managed care patients out of the ED and putting them back into the managed care system," Frew notes. "So I would expect that they are going to say that this practice inheritely prejudices the system against EMTALA compliance."

Managed care plans are cutting costs by paying doctors to duplicate ED coverage solely for their participants. "Dual staffing is a new concept that hasn't penetrated the market extensively yet. However, there is obviously a lot of money involved here and it will probably expand,"says Frew.

Dual staffing segregates out patients in managed care plans, says **Larry Bedard, MD, FACEP,** director of emergency services at Doctor's Medical Center in San Pablo, CA. "I believe it is a clear violation of EMTALA to segregate patients out based on their financial status," he says. "This sets up two systems of care, and in essence discriminates against people based on their financial status."

Medicare and Medicaid patients and prior authorization. The bulletin addresses rules governing Medicare and Medicaid managed care plans with respect to prior authorization requirements and payment for emergency services.

Best practices. The bulletin addresses "best practices" that will promote compliance with EMTALA by hospitals when managed care enrollees seek emergency services. These best practices include:

- No prior authorization before screening or stabilization;
- No financial responsibility or advanced beneficiary notification forms prior to performing an appropriate medical screening examination; and
- Qualified medical personnel must perform medical screening examination.

Medical malpractice cases. "Many plaintiff lawyers are using EMTALA as a basis for medical malpractice cases, which is not what it was intended to do," says Dresnick. "Because of some lack of clarity in some areas, they have shifted the onus from plaintiffs to defendants to prove they hadn't violated EMTALA. There was recently a case of an alleged EMTALA violation after the patient had been hospitalized for three months. The issues EMTALA was originally designed to address somehow became less clear."

Closing loopholes. "Many managed care plans have tried to contract their way to success and reduce use by throwing up roadblocks to care," says Dresnick. "The events of this past year demonstrate vividly why that is not a strategy for long term success."

"We are beginning to see plans focusing what they should focus on, which is better patient care," Dresnick notes. "By clarifying regulations, the bulletin will close

loopholes and force managed care plans to devote time to things they should have been doing all along." ■

ACEP 1999: What's coming 'around the bend'

"There are a number of different areas we are focusing on for 1999 of major interest to ACEP and emergency medicine," says **John Moorhead, MD, FACEP,** ACEP president and professor of emergency medicine and public health and preventative medicine at Oregon Health Sciences University.

"The environment is changing so quickly and will continue to affect the practice of emergency medicine. We are finding the ED caught in the middle of a lot of issues. There are many challenges but I am excited to work on them on behalf of our physicians and patients," says Moorhead. "We have an ambitious agenda this year, but have a lot of good people working toward these goals."

Here are several issues that ACEP is focusing on this year:

Patient rights legislation. "At this point, 18 bills have been introduced and we supported 16 of them. We expect to support other bills which will be introduced this session," says Moorhead. "We are very optimistic because of bilateral support from both parties, and because the public is extremely interested in this."

Uninsured. "The issue of uninsured patients and our ability to protect our role as safety net providers is extremely threatened due to high levels of unreimbursed care," says Moorhead. "We have put a task force together to look at this issue."

Fraud and abuse. "Documentation guidelines that all physicians need to follow have been developed through HCFA. Unfortunately we are seeing some liability for individual ED physicians on the basis of simple miscoding," notes Moorhead. "We have to work very diligently with both HCFA and the Department of Justice to make sure we are all using the same approach."

The issue of coding is not black and white, Moorhead stresses. "Coding is not scientific and is open to interpretation. However, it's being prosecuted as if it were true fraud," he notes.

Graduate medical education. "We are addressing the needs of academic physicians, and have a strong liaison with the Society of Academic Medicine to collaborate on this issue," says Moorhead.

Work force study. ACEP is repeating a landmark study done two years ago which showed that 32,026 physicians were clinically employed in the specialty of emergency medicine. "The new study will focus on changes in the emergency medicine task force," reports Moorhead. Trends in the number of clinical practitioners will be identified, and environmental factors impacting the demand for emergency care will be examined.

"This is extremely important to our residents and practicing physicians," he says. "The study will be completed this year and has been approved by the board. We hope to work with the Emergency Medicine Foundation, our major funder of research, to financially collaborate support this."

The previous study provided the first empiric data on how many people are actually practicing clinical emergency medicine, says Moorhead. "With all the concern about Medicare viability and graduate medical education being looked at by several national groups, we need additional data. We need to know what changes are occurring in the work force so we can have an appropriate position to advocate for our training program."

Mentoring program. "We are working with emergency medicine residents to implement one of our first mentoring projects," says Moorhead. "It's a project that will be important to residents and young physicians enter-

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ing practice who want to get more involved with their specialty through their local chapters." At a Washington, DC, legislative meeting in April, ACEP will unveil a model for this project, which will be fully implemented by October.

Residency graduates should be encouraged to practice in nonurban settings, says Moorhead. "The continued maldistribution of emergency physicians mandates new approaches to make nonurban practice sites attractive for residency grads," he says. "Emergency medicine residency curricula must be reexamined to look at not only what kind of training is provided, but also where residents are trained."

Collaboration. "Our goal is to get all emergency medicine organizations working together on these issues," says Moorhead. "We are a young specialty, and have a lot of young organizations. We are redoing our core curriculum content and database for board examinations, and need all of our groups and societies working together and collaborating." ■

Meet new ACEP president, John Moorhead

John Moorhead, MD, FACEP, professor of emergency medicine and public health and preventative medicine at Oregon Health Sciences University (OHSU) is ACEP's incoming president for 1999.

"As emergency physicians, our responsibility and commitment must be greater to our patients than to ourselves," he says. "Despite the current turbulence and changes in the health care system, ACEP must continue to promote quality, which means 'doing the right things right' and making continuous improvement."

Before becoming president of ACEP, Moorhead served in several leadership positions at OHSU, established an academic department of emergency medicine, and served as its first chairman. He also served as chief of emergency services at OHSU Hospital and as chief of the medical staff for 12 years.

Moorhead has been active in addressing numerous emergency medicine issues, including design of academic health centers, EMS and trauma systems, and workforce planning. He has addressed national issues, such as prudent layperson legislation, the relationship between blood alcohol and drowsy driving, and preventing motor vehicle crashes.

"We must build the future on the sound foundation that ACEP's leaders constructed these past 30 years," Moorhead says. "Yes, we anticipate struggles related to a changing health care system, but also much continued success for both our patients and physicians, based on our diligence, innovation, and leadership." ■

CE objectives

After reading this issue of *ED Management*, the continuing education participant should be able to:

1. Discuss and apply new information about various approaches to ED management.
2. Explain developments in the regulatory arena and how they apply to the ED setting.
3. Share acquired knowledge of these developments and advances with employees.
4. Implement managerial procedures suggested by your peers in the publication.