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Inside

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An update on JCAHO: What you need to know to prepare for your next survey

Changes in standards include restraint and reporting of sentinel events

There are several changes in JCAHO standards that you may not be aware of, says **Gloria Bower-McLaughlin,** a Claremont, CA-based health care consultant. "As an ED manager, you are responsible for the integration and coordination of your accreditation preparation activities with the entire hospital, so it's imperative you keep up-to-date," she stresses. Other changes in JCAHO standards for the ED include changes in the time frame for reporting sentinel events and using medical/surgical restraint policies.

There are several ways to remain informed about new developments. Use JCAHO's quarterly updates, new monthly newsletter, information hotline, and Web site to keep abreast of changes in the standards, urges Bower-McLaughlin. "You must embrace the JCAHO standards, creating an environment where preparation efforts and compliance with the standards are systematically integrated into your daily activities and where all staff members are educated and participate in the process," she recommends.

Here are updates of JCAHO standards and "hot button" issues which are currently under surveyors' focus:

Time frame for reporting sentinel events

The time frame for reporting was recently extended from within 30 days from date of occurrence through date of awareness, to 45 days. "You should do an intensive assessment of any adverse event," recommends **Elizabeth DiGiacomo-Geffers,** RN, MPH, CNAA, a health care consultant based in Trabuco Canyon, CA. "You should consider doing a root cause analysis, which includes looking at systems, processes, and outcomes. If you do intensive assessments routinely, you will be far ahead of the game in terms of correcting a system."

Assessments of sentinel events should be a multidisciplinary process, DiGiacomo-Geffers advises. "Realize that it's never one person or thing that causes an adverse outcome, it's a multitude of things," she says.

Since the root cause analysis focuses on systems and processes rather than individual performances, successful completion will include an action plan that identifies how to reduce the risk of similar events in the future, advises

Bower-McLaughlin.

She suggests that measuring the effectiveness of the root cause analysis can be accomplished by asking and answering the following questions:

- Have the processes and systems been improved to reduce the risk of sentinel events?
- Are staff able to perform the skills more safely and effectively?
- Is further improvement necessary?

"If the questions are answered through formal quantifiable measurement methods (e.g., direct observation, individual interviews, or skills assessments) the patterns of performance can be trended and communicated [to the surveyor]," says Bower-McLaughlin.

A credible root cause analysis takes time to complete, DiGiacomo-Geffers notes. "You will find the first one very time consuming, but it gets easier. Practice makes for a much more credible analysis," she advises.

All ED staff should know whom to contact in case of a sentinel event, says **Sue Dill Calloway,** BSN, RN, MSN, JD, director of risk management for the Ohio Hospital Association in Columbus. "This is key, because there are only 45 days to do a thorough and credible root cause analysis, which is a very short time frame," she says.

Since January 1995, the JCAHO has reviewed 441 sentinel events, 84% of which were self-reported by the facility. "Others are reported through the media, HCFA, patients or their families, or are discovered by surveyors during a survey," Bower-McLaughlin explains. "The ED reports 2.7% [of JCAHO-reported sentinel events], which is significant considering the number of hours patients are in the ED as compared with inpatient days."

Don't ignore near misses, which include risk of anticipated death or permanent illness, DiGiacomo-Geffers stresses. "A patient may have been given 10 times his or her dosage. Maybe because the patient was an adult, it didn't kill him or her but it extended the length of stay. However, if the patient had been a child, it could have caused permanent injury and/or death," she explains. "This type of occurrence requires an intensive assessment, including a root cause analysis."

New restraint standards

The JCAHO has approved new standards for restraints, effective as of Jan. 1, 1999, reports DiGiacomo-Geffers. "The medical/surgical standards for restraint now apply to patients in the ED. Even if the patient has a psychiatric condition, until the patient is admitted, the medical/surgical standards apply while the patient is in the ED," she says.

Before the standards were changed, the behavioral health standards applied for patients with psychiatric diagnoses, notes **Pat Staten,** RN, MS, associate director of the department of standards and interpretation at the JCAHO. "If the patient came into the ED and had a psychiatric diagnosis, they had to comply with the more vigilant standards for the inpatient psychiatric unit," she says. "Now the behavioral health standards don't apply until the patient is actually transferred to the inpatient behavioral health setting and has a confirmed diagnosis."

Under the old standards, if the patient had a previous psychiatric diagnosis, there was ambiguity about which restraint standard applied. "Before, if a patient had a history of mental illness, there was deliberation about whether the ED should be complying with the more vigilant standards, such as monitoring every 15 minutes, and so on," says Staten. "The final determination was made that all patients would be under the medical/surgical restraint and seclusion standards until they leave the ED."

Under the behavioral health standards, the [patient's] physician must be notified within an hour, but under the medical/surgical standards, the time limit is 12 hours, Staten notes.

The new standards are less restrictive, DiGiacomo-Geffers says. "They are easier to comply with, but you need to follow the standards to a 'T,'" she stresses.

Nurses can initiate restraints and get an order later. "This is a good thing, because nurses can initiate restraints in an emergency," says Dill Calloway. "There may be only one doctor working, or some EDs may not even have 24-hour physician coverage. This could be important because if the doctor is in a code, and the nurse is faced with an erratic patient, this

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COMING IN FUTURE MONTHS

- Educate staff about costs
- Update on patient bill of rights
- Reduce risks of delays and overcrowding
- Implement new NG insertion tube techniques

Sentinel Event Policy Facts

The Joint Commission's Sentinel Event Policy is designed to encourage the self-reporting of medical errors in order to learn about the relative frequencies and underlying causes of sentinel events, share "lessons learned" with other health care organizations, and reduce the risk of future sentinel event occurrences.

By addressing the issue of medical errors, the Joint Commission seeks to strike a balance between the public's expectations of a credible accreditation process and the practical needs of health care organizations.

This policy provides an opportunity to expand the Joint Commission's database of sentinel events that occur with significant frequency. The database also will categorize the most common underlying causes of these events. Information about sentinel events, and how they can be prevented, will then be regularly distributed by the Joint Commission to the health care community in an effort to reduce the frequency of medical errors—thus, ultimately improving the care delivered to the public.

A sentinel event is any unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof. Serious injuries specifically include a loss of limb or function. The phrase "or the risk thereof" includes any process variation for which a recurrence would carry a significant chance of a serious adverse outcome.

Any time a sentinel event occurs, the accredited organization is expected to complete a thorough and credible root cause analysis, implement improvements to reduce risk, and monitor the effectiveness of those improvements. While the immediate cause of most sentinel events is due to human fallibility, the root cause analysis is expected to dig down to underlying organization systems and processes that can be altered to reduce the likelihood of human fallibility in the future.

A new standard that creates explicit expectations regarding the internal identification and management of sentinel events was added to the Leadership chapter of the accreditation manuals and became effective on Jan. 1, 1999.

The Joint Commission's approach to sentinel events echoes the call of the National Patient Safety Foundation at the American Medical Association for protected venues that encourage the self-reporting of errors as a first step in their reduction.

Sentinel Events Subject to Review

Under the Sentinel Event Policy, a defined subset of sentinel events are subject to review by the Joint Commission, and may be reported to the Joint Commission on a voluntary basis. Only those sentinel events that affect recipients of care (patients, clients, residents) and that meet the following criteria fall into this category:

- The event has resulted in an unanticipated death or major permanent loss of function, not related to the natural course of the patient's illness or underlying condition, *or*
- The event is one of the following (even if the outcome was not death or major permanent loss of function):
  - Suicide of a patient in a setting where the patient receives around-the-clock care (e.g., hospital, residential treatment center, crisis stabilization center);
  - Infant abduction or discharge to the wrong family;
  - Rape;
  - Hemolytic transfusion reaction involving administration of blood or blood products having major blood group incompatibilities; *or*
  - Surgery on the wrong patient or wrong body part.

Each accredited health organization is encouraged, but not required, to report to the Joint Commission any sentinel event meeting the above criteria for reviewable sentinel events. Alternatively, the Joint Commission may become aware of a sentinel event by some other means such as communication from a patient, family member, or employee of the organization, or through the media. If the Joint Commission becomes aware (either through voluntary self-reporting or otherwise) of a sentinel event, the organization is required to:

- prepare a thorough and credible root cause analysis and action plan within 45 calendar days of the event or of becoming aware of the event; *and*
- submit to the Joint Commission its root cause analysis and action plan, or otherwise provide for Joint Commission evaluation of its response to the sentinel event under an approved protocol, within 45 calendar days of the known occurrence of the event.

Source: JCAHO; Oakbrook Terrace, IL.

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allows the nurse to initiate the restraint and then get an order later on."

DiGiacomo-Geffers advises you to ask yourself two questions when evaluating ED patients for restraint: 1) is the restraint clinically justified?; and 2) is it and medically necessary? "An example is a patient who presents in respiratory arrest who is pulling out tubes. He is intubated and has a Blakemore tube in place. His ABGs and electrolytes are out of the upper/lower limit. This is a patient in which restraints are clinically justified and medically necessary."

If a very sick patient were to pull out either the Blakemore tube, which is preventing him from hemorrhaging, or the endotracheal tube, which allows him to breathe, it could result in death, notes DiGiacomo-Geffers. "It's a matter of doing what's right for the patient, versus doing what is right for staff. If you are restraining a patient because you don't have enough staff, that is not appropriate use of restraints."

Conduct an initial, baseline assessment of aggregate data, then continuously monitor targeted elements, says Bower-McLaughlin. "In the performance improvement process, the goal is to identify and reduce the risks of restraint use. So any alternative strategies or performance improvement processes that address this will be useful," she explains.

Surveyors want to see performance improvement in the ED, DiGiacomo-Geffers explains. A surveyor will evaluate patterns and trends by looking at when you apply restraints, what type of patients are restrained, which shift applies them, and who the practitioner is that orders them.

Also keep in mind that use of restraint should involve multidisciplinary participation. "If the patient behavior has to do with drug interaction, you need a pharmacist and a physician to evaluate and help you set criteria," says DiGiacomo-Geffers. Likewise, occupational therapists can train ED staff in diversional

New Oryx program: Get your ED on board

JCAHO's new Oryx program will evaluate hospitals, including the ED, by using continuously collected data on various performance measures. The ED is in a prime position to benefit from the Oryx program, stresses **Stuart B. Shikora,** MD, FACEP, a physician surveyor with JCAHO. "ED managers should be leaders within their institution in finding and advocating for studies that reflect on their performance," he says.

Previously, JCAHO assessment was based on a "snapshot" of performance improvement, consisting of a single report generated for a survey. With Oryx, data will be recorded month by month, with results tabulated each quarter for an annual report. The long-term goal is to improve care by identifying trends and outlying cases, and to allow hospitals to address performance issues between surveys.

Currently, Oryx is directed at the hospital level. "When we go in and do a survey, we ask how you are prepared for Oryx, and what your plans are for the next year or two," he explains. "At this point, it's more of a question asked at the leadership conference, not the departmental conference."

However, it's strategic to get involved with Oryx now, says Shikora. "Managers should be proactive and read up in the literature about the indicators. Get on the bandwagon early," he advises.

An indicator is part of a performance measurement system; it is selected from a list published by the Joint Commission. Examples of indicators include the time between ED arrival and CT scan, or the time between identifying a patient's chest pain as a heart attack and the administration of thryobolytics.

The first step is to identify Oryx indicators that involve the ED. "ED managers should log onto the JCAHO Web site to find several topics that they think would be of value to their department to pursue," says Shikora.

Oryx measures that affect the ED include adverse drug reactions, acute MIs, antibiotic use, congestive heart failure, diabetes, equipment failures, conscious sedation, medication errors, pain management and pneumonia, says **Kathleen Catalano,** RN, JD, senior consultant for the Greeley Company, based in Marblehead, MA.

Find out what indicators your facility has chosen to pursue, urges Catalano. "As of this year, you must select four indicators representing 25% of the patient population. If you choose trauma patients as an indicator, it doesn't mean that 25% of ED patients are trauma patients, it means that 25% of the hospital's patients come through the ED," she explains.

The ED is a prime candidate to pursue for many of the Oryx indicators, Shikora emphasizes. "Surveyors look at the ED as a microcosm of the hospital. Given that, department managers can become leaders in the hospital by identifying some of the more interesting or perhaps problematic standards, which can then be improved."

Understand how data is reported. To fully benefit from Oryx, you need to be able to understand statistical

therapy techniques, and physical therapists should give input on range of motion and positioning of patients, she suggests.

Hospitalwide focus for managers

As late as 1995, department managers could prepare their areas of the hospital independently, using their own JCAHO chapter, says Bower-McLaughlin. "Those times are past. Through coordinated efforts, ED managers must participate in the hospital's preparation activities to assure the standard of care in their area is consistent with the hospital's standards," she notes. Participate in collaborative performance improvement activities, such as integration of appropriate policies, procedures, and protocols, hospitalwide committees, and networking with other managers, Bower-McLaughlin recommends. "ED managers often feel they have a unique, independent environment, but JCAHO preparation is an area where collaboration is essential,"

Evaluating conscious sedation

EDs are still not monitoring conscious sedation outcomes appropriately, warns DiGiacomo-Geffers. "This is still a 'hot-button' topic, because staff aren't consistently trained and educated. Patients need to be evaluated prior to procedures," she explains. You need to measure outcomes and identify patterns and trends before an injury occurs in the ED.

JCAHO standards do not require that the physician be privileged, or a complete [patient] history and physical be taken; however, that is good practice, says DiGiacomo-Geffers. "It is not required per se. However, competent, trained staff are essential, and an assessment of the patient prior to administration of sedation analgesia is a necessity," she notes.

Your practice must match whatever policies your institution has in place. "If your organization's policy is to privilege physicians and/or nurses, then you must make sure that your practice follows policy,"

process control. "There is a variety of control chart types which reflect different types of data, so you need to be familiar with the way the data is accumulated and reported," says Shikora.

Once the core measure data is collected for the indicators you've chosen, JCAHO surveyors will want to see how you plan to improve. "Once you have the data and know how you're stacking up, then you've got to take action," says Catalano. "Right now JCAHO has the prerogative to ask how you're doing. By the time 2001 rolls around, surveyors will want to see your action plans."

However, at this point surveyors will ask only if you are reporting to Oryx and what indicators you've selected. "Right now, the hospital is allowed to choose its indicators. So people are measuring the indicators that they'll get 100% compliance on, and won't choose things which they won't do well on," says Catalano.

At a later date, hospitals will be assigned indicators. "The JCAHO will effectively be saying, 'you don't have a choice this time.' This will actually give them some real data," says Catalano.

Generally, to measure an indicator takes 3-6 months to plan and a year to gather data and report it to central reporting facility, says Shikora. "At that point, data will be pooled with other institutions. That will give you a clear idea of how your ED is performing when stacked up against other, comparable facilities," he says.

The program will allow EDs to compare outcomes, to identify outstanding and poorly performing EDs. "Oryx is a valuable data-gathering tool, allowing an institution to compare itself to others of comparable size and to get feedback," says Shikora. "Historically, data haven't been collected on a nationwide basis, which would allow facilities to compare themselves to peers. Until now, it's only been done through chain hospitals or specialty organizations."

The primary goal of Oryx is continuous quality improvement. "By obtaining data quarterly, JCAHO will be able to show continuous improvements," says Catalano. "Then you can see how it's affecting you across the board, across the country, with other hospitals reporting on the same indicator. Everybody will have to turn in the same data, so we're going to find out what's really going on out there." ■

Editor's Note: *For more information on JCAHO standards, contact the Interpretation Unit, Department of Standards at One Renaissance Boulevard, Oakbrook Terrace, IL 60181. Telephone: (630) 792-5900. Fax: (630) 792-5942. E-mail: standards@jcaho.org. Internet: www.jcaho.org/standards.htm. The Interpretation Unit receives approximately 30-50 e-mails, letters, and faxes and 350-400 phone calls per day. The unit encourages organizations to send their questions via e-mail, when possible, if a documented response is required. Individuals requesting a standard clarification should have the following information available: Name and title of person requesting information, name and type of organization, office phone, e-mail address, and a description of the issue, including the applicable manual and standard.*

Source: For more information about the Oryx program, either call the Oryx Information Line at (630) 792-5085, or e-mail questions to oryx@jcaho.org.

DiGiacomo-Geffers explains. "If the policy says they must be advanced cardiac life support (ACLS) certified, that is your requirement, not JCAHO's. But if you define 'competently trained' people as ACLS certified in your policy, then a surveyor could validate if staff is ACLS certified."

Surveyors want to see that processes and outcomes are measured. "Someone in the organization must have oversight to look at these outcomes and what you have improved in terms of patient care, as it relates to sedation analgesia," advises DiGiacomo-Geffers. "For example, if patients often require an antagonist following sedation analgesia with Dr. Jones, then how are you looking at the practice, the dosage, and what happens to the patient?"

Knowledge and process deficits both need to be evaluated. "If either or both occur, you may have an adverse outcome," DiGiacomo-Geffers notes. "If somebody lacks appropriate training, then you have a potential for an adverse outcome. Likewise, if the oxygen saturation machine is not working and you have no way to monitor the vital signs during the procedure, you also have potential for an adverse outcome."

Surveyors want to see consistent standards for conscious sedation throughout the hospital. "So if a surveyor goes to the ED, they want to be assured that staff are competent and patients receive the same level of care whether they receive sedation or analgesia in the ED or cath lab," DiGiacomo-Geffers says. "The ED may serve a particular patient population, but they should use the American Society of Anesthesiologists' (ASA) guidelines for conscious sedation, and have a hospitalwide policy on conscious sedation."

Treating victims of abuse

There are three JCAHO standards that address victims of abuse: 1) the identification and criteria; 2) the evidentiary process; and 3) education and training of staff. "This applies to all health care workers who work in the ED and come in contact with the patient," stresses DiGiacomo-Geffers. "If a transporter takes an elderly patient from ED to MRI and the patient says 'my son stole my social security check and threatened me,' the transporter needs to know who to report it to."

Hospitals are responsible for developing criteria for identification of victims of abuse. "Hospital staff must be trained to assess and report, if appropriate, victims of alleged or suspected abuse," says Bower-McLaughlin. These criteria need to at least be addressed:

- Physical assault
- Rape or other sexual molestation
- Domestic abuse
- Abuse or neglect of elders and children

Other departments may look to the ED for guidance in complying with JCAHO standards for abuse, notes Staten. "This had always been a requirement for the ED, and then it went organizationwide in 1994. Now the standards apply to all patients, not just those that come to the ED. So the ED has been complying with those standards for a much longer period of time," she explains.

Stay informed about standard changes

The Joint Commission created a new, official monthly newsletter, titled *Perspectives*, which is sent to accredited organizations to give up-to-date news straight from the source, notes Dill Calloway. "The premier issue was faxed to all accredited organizations on January 4th of this year, and eventually will be available via e-mail," she says.

Topics covered in the first issue included a meeting of 700 surveyors to review the changes in the standards for 1999, JCAHO type I recommendations dealing with the Y2K issue; and 1999 random, unannounced survey grid elements.

Y2K preparation and compliance

Standards call for an organizational strategy to address Y2K compliance, says Dill Calloway. "The Joint Commission will simply be determining whether the organization is aware of and planning for the year 2000." she says.

To avoid type I recommendations, take steps to 1) identify and assess the implications of Y2K on your operations, including computer systems, medical equipment and utility systems; and 2) determine whether [vendors] are addressing the Y2K issue, Dill Calloway advises. **(See section on recommendations on p. 67.)**

Registering patients as organ donors

Beginning Jan. 1, 1999, revisions to the standards require hospitals to make sure they identify a designated, qualified requester for approaching potential donor families. "If you have a death in the ED, not just any nurse can go up to the family and ask about organ donation," Dill Calloway explains. "Now you need to designate someone who has had training, or have the organ procurement agency make a decision about whether it's appropriate to talk to the family."

Patient privacy issues

Staten says privacy issues are a continued focus of surveyors. "Making sure that confidentiality and pri-

JCAHO Accreditation Recommendations

Recommendation: Any recommendation requires the health care organization to take corrective action based on the nature, severity, or number of compliance problems. The Joint Commission will closely monitor the results.
Type I Recommendation: A Type I recommendation requires the health care organization to resolve insufficient or unsatisfactory standards compliance in a specific performance area. The organization must resolve Type I recommendations in a specified amount of time to maintain its accreditation. Organizations report corrections through a written progress report or during an unscheduled survey.
First-generation Type I recommendation (second-generation, third-generation): The first time the Joint Commission finds a problem, a first-generation Type I recommendation is issued. If the problem is not corrected within the given time, a second-generation Type I recommendation is issued, and so on.
Supplemental recommendation: A supplemental recommendation is issued when a standard is scored below substantial compliance (that is, less than a score 1), but a type 1 recommendation is not issued. If not resolved, a supplemental recommendation may affect the organization's future accreditation decisions.
Source: JCAHO; Oakbrook, IL.

vacy is upheld is particularly challenging for the ED because it's a more open area," she says. "You need to be aware of where a patient may be in proximity to other patients." Ensuring that there is no identifying, clinical information on boards visible to other patients is another part of patient privacy.

It may not always be possible to put patients in a separate room, but staff need to take to give patients as much privacy as possible, says Staten.

Dealing with patient complaints

"It is very important to provide an opportunity for patients to verbalize complaints if they're not happy," says Dill Calloway. "Now a patient can get on the JCAHO Web site and file a complaint against the hospital on the Internet or can copy the complaint form and fax it to them. There is also a toll-free hotline."

Take steps to resolve patient complaints internally, urges Dill Calloway. "The bottom line is that managers need to be more aggressive with fixing problems. Otherwise instead of complaining to you, patients may go to an outside party like HCFA or JCAHO," she stresses. "Also, if you violate a JCAHO standard and a patient finds out, they can use that standard in a court of law." ■

Remembering universal precautions in the ED

Clinical pearls for ED managers

A recent study found that compliance with universal precautions in the ED was surprisingly poor.[1] "We hadn't expected to find such high levels of noncompliance, so it was a little disconcerting," says **Bradley Evanoff,** MD, MPH, assistant professor of medicine at Washington University School of Medicine and principal investigator of the study. "It's very likely that non-compliance is common in EDs."

ED personnel caring for trauma patients were videotaped during 88 cases, and the use of barrier precautions was recorded. Breaks in the use of precautions were recorded in one-third of 304 invasive procedures. The most common break was failure to wear a mask (32.0% of procedures), followed by inadequate eyewear (22.2%), no gown (5.6%), and no gloves (3.0%).

The ED was chosen for the study because it's one of the highest risk areas in the hospital for infection with bloodborne pathogens, Evanoff says. "The patient population in EDs have an unusually high rate of seroprevalance of hepatitis B and C and HIV. Events are unplanned and sudden, and people are likely to be bleeding or expelling blood or body fluids," he explains.

The study showed that health care providers wore gloves consistently. "Some groups also wore gowns very consistently, although physicians tended not to," says Evanoff. "Inadequate eyewear and failure to wear a mask were the most common breaks in precautions."

Widespread failure to wear protective eyewear was most troubling, says Evanoff, who offers an explanation. "Eyewear is still rather uncomfortable. Shields have a way of fogging up and goggles aren't completely comfortable," he notes. "And for people who wear prescription glasses, goggles are not necessarily a great solution."

Here are some potential reasons for noncompliance with universal precautions, according to Evanoff:

- Providers may assume patients don't have a bloodborne pathogen;
- Health care providers may feel they're not going to come into contact with blood and body fluids;

- A student or attending physician may assume they will be observing, then be called upon to be involved in the case;
- A perception that need for urgent action is so great that the health care provider can't take time to fully don barrier protection;
- Health care providers may believe "it won't happen to me;" and
- Eyewear protection is unconfortable.

Measure your own compliance in your ED and feed it back to staff, Evanoff recommends. "You could do a simplified form of what we did in our study," he suggests. "During trauma cases, periodically monitor who is complying with personal protective equipment. We did it with a videotape, but it could also be done with live observers."

Use a simple scoring sheet that looks at one or two behaviors, and count up compliance in a few dozen cases. "You may see a dramatic improvement in compliance after you share the results with your staff," he notes.

In addition to continually educating staff about risks of infection in the ED, make it as easy as possible to comply with universal precautions. Anything that can be done to lower staff resistance to complying is good, says Evanoff. "Make sure masks, gowns, eyewear, and gloves in a range of sizes are present at the door to the room, so staff literally have to walk past it to get into the room." ■

Reference

1. Evanoff B, et al. Compliance with universal precautions among emergency department personnel caring for trauma patients. *Ann Emerg Med* 1999;33:160-165.

Should you switch to point-of-service billing?

Will it help with collections problems?

Point-of-service billing is one way for your ED to improve its collections, says **D.W. "Chip" Pettigrew III,** MD, FACEP, medical director of the ED at Athens Regional Medical Center (GA). "This is a growing trend, and the trend will continue to grow as reimbursements continue to decline ," he predicts. Arranging for service payments while the patient is still at the ED may make billing more efficient, as well.

Point-of-service billing provides the following opportunities, says Pettigrew:

- to assure that all of the billing information obtained by registration is correct;
- to discuss with the patient that, although payment up front is not expected, payment is expected for every ED encounter;
- to get the patient to commit to payment verbally; and
- to obtain copayments and deductibles without having to send out mailed bills to the patients.

The ED at Athens Regional is in the process of implementing point-of-service billing, reports Pettigrew. "It takes a strong push from senior hospital leadership after convincing them that point-of-service billing makes fiscal sense," he says. "After that, it takes a complete cultural change in the ED to have the patient care nurse direct the patients to the point-of-service billing desk at discharge, rather than load the patients up in their cars and send them on their way."

Most EDs would benefit from point-of-service billing, says Pettigrew. "The variety of patients coming to EDs is not exclusive in any one area and, with each type of ED (large or small, public or private, suburban or inner city), there will be a significant number of patients who will be able to pay at the point of service. This is more efficient than sending them a bill through the mail, followed with more expensive mailings and phone calls," he explains.

Point-of-service billing is not an attempt to chase away the indigent population, or make them uncomfortable, Pettigrew argues. "It is a proper attempt by a legitimate business entity to get paid for services rendered," he says. "Point-of-service billing is a timely opportunity to remind patients of their responsibility to pay their ED bills. This is done in a manner that does not interfere with federal obligations mandating upfront medical screening examinations and emergency stabilization."

The primary advantage of point-of-service billing is getting paid more quickly, notes **Robert Williams,** MD, FACEP, research investigator at University of Michigan School of Public Health and former president of ACEP. "A 90 to 120 day turnaround time is the norm. So if the patient gets seen on January 1, you may not get paid until April or May. Also, Medicare might sit on it for a month or two before they pay you," he says. "If you have a good billing company, they should get the bill out in 30 days, but you still have to wait the 90 to 120 days."

Point-of-service billing would save 30 days of that time period. "Billing patients is an accounts receivable problem, because you are always owed money. If you could bill those patients immediately, it would help your cash flow," says Williams.

Also, systematically, new technology could make point-of-service billing a feasible option, says Williams. "In the future, we'll be able to capture data at the time of the patient's visit in some kind of paper-

less form," he explains. "If you used a handheld computer and could immediately transfer the data to a billing company, instead of having somebody in-house do it, that would be a viable alternative."

A currently vaible option for all EDs?

However, it's currently very difficult to generate a bill at the time of service in the ED, notes Williams. "It's a lot harder than it sounds to do it right," he says.

One problem is that patients often don't have their insurance information with them. "I don't think that people are as reliable and consistent in bringing insurance information with them to the ED, as they are when they're admitted to the hospital," says Williams. "Frequently they don't have their billing information, which is a serious encumbrance to billing onsite."

Without adequate information, an accurate bill can't be generated, Williams explains. "In our billing operation, half of the calls we receive about patients' bills are are related to the fact that when they came in, they didn't have insurance information. So the bill might mistakenly say the patient didn't have insurance," he reports.

Also, in order for in-house point-of-service billing to be effective, you would need a full time coding person to evaluate the record, Williams argues. "Our group has our own billing company, and we spend a lot of time and effort developing coding experts, many of whom are nurses," he says.

Only large EDs with very high volumes can justify having a full time coder on staff, says Williams. "Our coders can code 30 patients an hour because they're pros at it, but very few EDs have volumes of 30 patients per hour," he notes. "If it costs me $30 an hour to pay a coding person, and they code 30 patients an hour, it costs me a dollar per patient. But from an efficiency standpoint, if you see 2 or 3 patients an hour, it's just not cost efficient." ■

Use simulation to learn results in advance

Predict outcome of changes more accurately

Simulation is a process reengineering tool used to analyze current systems and then conduct "what if" scenarios. It allows managers to see changes represented before they actually put time and expense into altering their current system.

"Clients love this tool because they are able to actually see the effects using computer animation. This is an amazing tool and has an enormous potential in the health care field," says **Deborah Benson,** a senior consultant with VHA Performance Consulting, based in Charlotte, NC.

The tool allows you to test out ideas in a simulation before spending money and staff to implement them. "Often, people find out the results were not what they expected," says Benson. "At VHA, we love this tool because it helps us to identify concrete recommendations which will give ED managers the biggest bang for the buck."

ED managers at Holmes Regional Medical Center in Melbourne, FL, used simulation models to decrease average length of stay. "We were able to pick and choose the areas we wanted to expend more of our resources on, and predict success more accurately," says **John McPherson,** MD, FACEP, medical director of the ED.

The simulation can validate the benefits of changes. "It gave us more confidence that we'd have a fruitful investment. So instead of just considering making specific changes, we're actually investing actual time and resources to bring these services on board," says McPherson. "The tool helped to steer us in making some major resource allocation decisions."

Conversely, poor investments were also determined. "By modeling these potential changes, we could see that some of them would indeed have minimal effect," McPherson explains.

Test changes before you make them

Before using the simulation, the ED managers at Holmes Regional participated in a benchmarking study to set specific goals for improvement. "Nationally, the length of stay in the ED has been under criticism by patients. We would at least like to meet the average of our peers and not be an outlyer," says McPherson.

Once the ED's goals were set [by the manager], the consultants were asked for recommendations on how they could be achieved. Possibilities included using ultrasound in the ED, adding a trauma service to expedite the stays of the trauma patients, increasing staffing, switching to bedside registration, implementing an abbreviated and secondary triage to enhance flow, and adding an observation and chest pain unit.

The simulation model determined the impact of each of these changes on length of stay. "This enabled us to test the changes in a 'virtual world' without actually implementing changes to assess whether these changes and expense would be worthwhile," says McPherson. "Therefore, we have been able to proceed with confidence with our triage enhancement plan, our observation and chest pain unit, and our trauma service."

Data were collected to replicate the ED's day-to-day operations onto the model. "The data and their accuracy will have the biggest impact on the model's

success," says **Jan Hatzel Walker,** RN, MSN, CEN, director of emergency services at Forrest General Hospital in Hattiesburg, MS. Architectural drawings of the ED are used, along with processes such as triage, registration, ordering, frequency of tests, and volume.

Once the simulation has all the necessary information, current bottlenecks can be spotted, notes Walker. "Or you can change a process and see how it affects the patient flow," she says. "How much faster would the patient move through the system if you initiated a new protocol to get x-rays done up front? If you initiated a stat lab in the ED and reduced procedure time, what would be the effect on the length of stay?"

At Forrest General, a simulation model was used when the ED was redesigned. "We wanted to be sure we were going to improve the flow of patients and reduce the length of stay with the new space," says Walker.

The factors Forrest General considered were, according to Walker:
- the need for radiology services in the new ED;
- if the increased cost would justify the reduction in time; and
- would the new design be able to stand a 20% increase in volume?

All of this was shown to the Forrest General group via the simulation model.

Data are collected 24 hours a day for seven days, pertaining to all aspects of an ED visit affecting length of stay. "By altering some of these variables by simulation, we could project how it [altered] total length of stay," says McPherson.

The following information was recorded for every patient:
- time of arrival;
- time at triage;
- time to bed;
- time to being seen by a doctor;
- what kind of orders were generated; and
- how many were from protocol and how many from physicians.

"We also input what time registration was done. Because we do all registration at the bedside, that could occur at any time in the process," says Walker. "We also input what time the labs came back and how much time passed from when the physician made the disposition to when the patient was discharge. From that data, they created the model for simulation."

By gathering this data, the ED was able to examine its operations as they currently exist. "That way, we had a better handle on our current performance, so we could tailor our performance improvement plan appropriately," McPherson explains. "This gave us a clear goal, as to how much time we needed to shave off our total length of stay."

The efficiency of the ED's fast track was also examined. "We were able to assess how well we use those beds, and find out if we were appropriately triaging patients to fast track or not," says McPherson. Staff were interviewed at length about perceived delays, and simulation themes were chosen based on their input.

The simulation recommended the following changes, which were made in Forrest General's ED:
- implementation of a stat area for the ED in the lab;
- assigning a technician or nurse to accompany physicians into the exam room and do order entry at the bedside;
- dedication of two radiology rooms to ED patient procedures;
- ordering medical records on all patients as an automatic process at registration;
- adding a new triage station that staffed by a float nurse to be put in effect when necessary; and
- adding a chest pain area used for any patients when needed for overflow.

Some of the simulator's findings were expected, while others were not. "They recommended we implement bedside registration, which we had been planning for already. However, the enhanced triage process was not high on our radar screen, but the clear benefit of that became obvious," says McPherson.

The benefit of increased staffing resources can also be determined by the simulator. "We were trying to decide whether to put another doctor on from noon until 10 p.m.," says Walker. "We found out that putting another doctor on during peak time during our two busiest days would have enough of an impact to take eight minutes off our average length of stay."

Making key changes in processes was also found to have a major effect on length of stay. "By initiating the physician's order at the bedside, it would reduce the patient's length of stay by between eight and 11 minutes," says Walker.

The ED also examined how increased volumes of 5%, 10%, 15%, and 20% would affect the overall length of stay, and found there would be unacceptable delays. "Because of that, we went back to the architect and said, 'It's been shown when you build a brand new facility that you usually have an 8% to 10% increase in volume. Based on this data, we don't think that what you're building us can handle those increases,'" Walker says.

Planned changes had little benefit

At Forrest General, a decision was made not to add a stat laboratory in the ED after the model indicated there would be a limited change in the length of stay. "Therefore we were better able to evaluate the expense versus the overall benefit," says Walker.

First, several assumptions were agreed to by the lab and the ED, pertaining to where the time would be saved if the stat lab were added. "We had to agree on how much time was tied up in getting the specimen to the department and to the person running the test. We assumed there would be no time saved with order entry to collection, because the ED does its own phlebotomy collections here."

It was determined that three to four minutes would be saved for patients with lab tests, says Walker. "In the end when we looked at minutes saved, it wasn't enough to justify the cost of duplicating all the care in the ED," she explains. "It showed the cost was high for number of minutes saved, and there were other ways to save minutes without that severe cost."

Instead of adding a stat lab in the ED, a compromise was reached. "We realized that we could accomplish the same thing with a minimal cost, by building a stat area in the lab, with a tube system," Walker says. The system would have transported lab samples through a tube straight from the ED to the stat area.

In the same way, the simulation model showed that adding ultrasound capability to Holmes Regional's ED was not worth the expense. "We looked at the total length of time it took us to get an ultrasound out of the ED, sending the patient to radiology, with the delays inherent in bringing them back and getting a result read by the radiologist, and how much time would be saved by having it done directly in the ED," says McPherson. "We didn't feel making that change was going to enhance our service enough to justify the cost."

Limitations in the model

At Holmes Regional, the question of whether or not to add a stat lab is still undecided, due to limitations in the simulation model. "Outliers have a huge impact on our length of stay. If 15 out of 115 patients wait an hour or two longer, it can create major bottlenecks," says McPherson. "If we added a stat lab, I could just walk right across the hall to ask what's going with Mr. Wilson in bed eight, whereas we don't get good feedback from a distant laboratory."

Although the simulation model showed that the ED wasn't too far away from the average, it didn't take into account the outliers. Outliers are EDs that exceed or significantly fall below the average. An example would be an ED that has a much longer or shorter wait time than most.

"The mean alone is not the whole story. In our case, the benchmarks for certain labs was not too far away from our numbers. We had a little longer times in hematocrits and hemoglobins but it wasn't as great as we thought. However, the outliers can really create an exponential and ripple effect in discharge delays," says McPherson.

These intangibles can't be measured by the model, notes McPherson. "It's tough to quantify the outliers with the simulator," he explains. It can't measure their impact on the overall process and the average used to compare the ED to others. "The mean is a comparable entity, it's difficult to quantify the impact of outliers on the ED."

As a result, the simulator wasn't able to evaluate some of the intangible benefits of having an adjacent lab with the personnel part of the ED team, McPherson explains. "Because the major benefits of adding the stat lab would be in limiting some of these outliers," he says. "The simulation model was focused on decreasing the mean benchmark, which wasn't as valuable in this case."

Consultants who do simulation usually do not have clinical backgrounds, which can be a disadvantage, Walker advises. "You need to be very careful in explaining processes to them," she says. "I found they did not spend enough time going over the model with me. You

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need to be the one directing how much time is spent reviewing the model."

It's important to spend time actually looking at the model, Walker notes. "As a non-clinical person, all the consultant sees is the data. They may tell you a certain process would take eight minutes off your length of stay."

However, by looking at the model they've given, the applicable information may come from observing the larger picture. Even a portion of the data may help. "But by looking at the model, we can get information by seeing where patients are in the process. For example, how many patients are in x-rays in the evening? If you have seven patients over there, we know that part of the bottleneck comes from only having two rooms running at that point in time," she explains. "They do send you a copy of the model. You can't readjust it, but can at least take time and look at it."

Validate your intuition

The findings generated by simulation can help you to validate necessary changes to administrators. "There are a lot of things you know intuitively, and you can be saying them over and over, but no one is really listening," says Walker.

Some of the recommendations are common knowledge. "The fact that observation units may decrease length of stay is nothing new. But the simulation certainly helped us to justify the addition of our observation unit, which became very evident. It was quite helpful in our planning with the administration and getting support," says McPherson. "It clearly showed the 24-hour observation unit decreased length of stay, which was one of our major goals. The model adds validity to intuition."

Similarly, the model showed that by initiating the triage enhancement plan, 20 minutes could be cut out of each patient's ED stay, reports McPherson. "The trauma service was actually implemented before the results of the model came back. The simulation model showed it would have a significant decrease in ED stays of trauma patients, and the reality was fairly consistent with simulation," he says.

The tool's graphs, timelines, and process descriptions helped administrators to acknowledge specific benefits of changes. "It allowed us all to clearly visualize that if we made certain changes, there wasn't just a potential gain, but a probable gain," says McPherson. ■

Correction: *Due to an editing error in the February 1999 issue of ED Management, VHA was inaccurately described as affiliated with the Veteran Administration (VA). VHA Inc. is a performance improvement company and alliance of more than 1,800 not-for-profit health care organizations.* ■

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 one's peers.