Recruiting staff remains a serious challenge for hospital pharmacies

Hospital pharmacies face a difficult task in recruiting staff because they are forced to compete with not only retail pharmacies, but other hospitals as well.

“In a lot of places, there continues to be a demand for pharmacists that exceeds the supply,” says Susan Winckler, vice president for policy and communications at the American Pharmacists Association. “It’s good for the pharmacist in that type of environment.”

JCAHO Sentinel Event Alert focuses on prevention of tubing misconnections

Proper training and education can help hospitals avoid tubing misconnections, a topic the JCAHO highlighted in early April with a Sentinel Event Alert.

Misconnections are commonly caused by inexperienced staff and connector devices that are compatible across different lines and catheters, according to the alert (www.jointcommission.org/SentinelEvents/SentinelEventAlert/se a_36.htm).

“The most important thing for hospitals is to review this alert [and] discuss it at their safety committee and with nursing staff and central supply staff,” says Kurt A. Patton, MS, RPh, former JCAHO executive director of accreditation services. “They need to evaluate what they purchase, what they use, and what their risks might be. The only way they can fail is to not distribute and not discuss this information.” Patton is now principal of Patton Healthcare Consulting, LLC, in Glendale, AZ.

According to the alert, nine cases of tube misconnections have been reported to the Sentinel Event Database.

Eight of those cases ended in the patient’s death, and the other case led to a significant patient injury. Two cases involved infants.
Recruiting

the District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia) and the Pacific (i.e., Alaska, California, Hawaii, Oregon, and Washington).

Conversely, the lowest demand is found in the West North Central (i.e., Iowa, Kansas, Minnesota, Missouri, and Nebraska) and the East North Central (i.e., Illinois, Indiana, Michigan, Ohio, Wisconsin, North Dakota, and South Dakota) regions.

“There are no states that report a surplus [of pharmacists],” Winckler says. Four states have an even balance, 44 have a moderate demand, and three (including the District of Columbia) have a high demand.

Stiff competition from retail

The main rival that hospital pharmacies face in the recruitment battle is the retail pharmacy sector.

At the request of Congress, the Health Resources and Services Administration (HRSA) in December 2000 issued a report, *The Pharmacist Work Force: A Study of the Supply and Demand for Pharmacists*, which stated that more than 60% of the nation’s pharmacists are employed in retail or community pharmacies. About 29% are employed in institutional settings, mostly hospitals.

Winckler says those figures remain about the same today. “There’s certainly a push and pull [for candidates] from both [hospital and retail pharmacies],” she notes. “It’s a healthy competition.”

The HRSA report predicts that the overall number of active pharmacists will increase by 28,500 during this decade, from 196,000 in 2000 to 224,500 in 2010.

Rural areas have it tough

It’s not just the major metropolitan areas that have the highest need for pharmacists. “Sometimes it can be just as challenging to get someone to a rural area,” says Winckler.

Melinda C. Joyce, PharmD, FAPha, FACHE, director of pharmacy at the Medical Center in Bowling Green, KY, can relate.

“It is difficult to recruit staff [because] we are located about three hours from the closest college of pharmacy in Kentucky,” she notes. “Plus, there is just one [pharmacy] college in Kentucky, so there is a fixed number of graduates.”

Residency participants on the rise

One boost for hospitals is an increase in the number of pharmacy students applying to the residency match program, according to the latest figures from the American Society of Health-System Pharmacists (ASHP).

In 2000, there was a shortage of pharmacists entering residency programs. “Growth was smaller,” says Janet Teeters, RPh, MS, director of ASHP’s Accreditation Services. “We had more positions than applicants. In the past three years, that has changed. There are now more applicants than positions open.”

Residency programs help differentiate their graduates when they are in the job market, adds Teeters. In 2004, all of the colleges of pharmacy that participated in the match program converted to offering Doctor of Pharmacy (PharmD) degrees from the Bachelor of Science in pharmacy degree.

“It’s more challenging because you’re working in that interdisciplinary environment,” she says. “Things happen more quickly.”

Residency program graduates usually go on to work in hospital pharmacies, she says.

“When somebody comes out of pharmacy school, that’s usually when they would go to retail [pharmacies],” Teeter says. “The majority of pharmacists go into community practice.”

About 14% of pharmacy school graduates go into residency programs, a number that is growing, she adds. There are currently 773 residency programs, but in
2005 alone, ASHP added 70 new programs, Teeters says.

“People are looking to the residencies for those unique jobs that are rewarding,” she says.

There are growing programs in other new areas, including community care pharmacies and managed care residencies. The largest area of growth is in ambulatory care, Teeters says.

“The majority of our programs still reside on the hospital side,” she adds.

This year’s residency match program only includes first-year residencies, which comprise most of the available programs.

Beginning in 2007, ASHP will also include second-year programs in the residency match, Teeters says. These programs focus on a specialty such as oncology, critical care, or infectious diseases.

Other programs include management/master’s of business administration and pharmacotherapy residencies.

The number of positions offered through the match held in March was 1,222, with 1,356 applicants, almost a 13% increase over last year.

More than 1,000 participants were matched with a residency, a nearly 15% increase compared to the previous year.

Of the 198 residency positions still left open, many may still be filled, notes Teeters.

Demand should continue

Increasing automation technologies (e.g., bedside bar coding and packaging) will affect the pharmacist’s job, but they won’t replace pharmacists, says Winckler.

“We expect there to be continuing demand for pharmacists,” she adds. “We expect there to be a demand for pharmacists to care for patients.”

In addition, there are societal factors that should lead to a greater demand for pharmacists in the future, Teeters notes.

“We’re going to continue to see some shortages because the baby boomers are getting older,” resulting in more elderly patients requiring medications, she says.

The healthy salaries that pharmacists earn help attract more people to the profession, says Winckler.

According to Salary.com (www.salary.com), the median expected salary for U.S. pharmacists is $95,627.

“There are a lot of opportunities in pharmacy as a whole these days, and hospital pharmacy definitely fits into the picture,” says Joyce. “Pharmacists are an integral part of healthcare and, as the medication experts, have the ability to positively impact patient care.”

---

**HPRR Subscriber Services Coupon**

- **Options:**
  - Print: 12 issues $299 (HPRRP) $24.00 Shipping
  - Electronic: 12 issues $299 (HPRRE) N/A Shipping
  - Print & Electronic: 12 issues of each $374 (HPRREP) $24.00 Shipping

- **Order online at www.hcmarketplace.com Be sure to enter source code N0001 at checkout!**

- **For discount bulk rates, call toll-free at 888/209-6554.**

---

*Tax Information*

Please include applicable sales tax. Electronic subscriptions are exempt. States that tax products and shipping and handling: CA, CT, FL, GA, IL, IN, KY, MA, MD, MI, NC, NJ, NV, OH, OK, PA, RI, SC, TN, TX, VA, VT, WA, WI. States that tax products only: AZ. Please include $27.00 for shipping to AK, H, or PR.

Mail to: HCPro, P.O. Box 1168, Marblehead, MA 01945 Tel: 800/650-6787 Fax: 800/639-8511 Email: customerservice@hcpro.com Web: www.hcmarketplace.com

For permission to reproduce part of all of this newsletter for external distribution or use in educational packets, please contact the Copyright Clearance Center at www.copyright.com or 978/750-8400.
Many of the cases involved luer connectors, which act as a universal connector for tubing, according to the alert.

The connectors allow users to connect two tubes, which can lead to error. Other causes include using tubes for inappropriate procedures and keeping dissimilar tubing next to each other on or near the patient.

The JCAHO has called on manufacturers to redesign tubing and connectors to reduce interoperability between disparate lines, thereby creating a mechanical inability to connect incorrect lines.

Considerations when purchasing devices
Hospitals should take extra care to make sure that new tubes, catheters, and connector devices do not correspond with those already in use at their facility, according to Patricia Gilroy, MSN, MBA, clinical patient safety coordinator at Alfred I. DuPont Hospital for Children in Wilmington, DE.

“We conduct tests and assess risks on the devices before we purchase new tubing,” Gilroy says. “We want to make sure [that] it can’t be connected to our current pumps and connectors.”

According to Gilroy, DuPont Hospital has built testing into its purchasing process for tubing, catheters, connectors, and related devices.

“We’ve put some very specific tools in place to prevent [interconnectability]” she says. “We check to make sure [that] connectors can’t be plugged into other tubing. It’s part of our assessment tools.”

Training helps prevent errors
Proper training in IV pump use and labeling lines is a great way to prevent errors, according to David Benjamin, PhD, a fellow at the American College of Clinical Pharmacology and American Society for Healthcare Risk Management.

Benjamin spoke about the subject while commenting in the April Briefings on Patient Safety (BOPS), published by HCPro, Inc., about a United States Pharmacopoeia (USP) study.

“Hospitals have to make sure [that] they train people and make sure [that staff] are familiar with the specific pumps [that] they use,” said Benjamin. That’s true of any type of equipment the hospital uses, he said.

Unfortunately, it can be easy to confuse different lines running through the same pump, said Benjamin. “When you see a patient receiving multiple infusions, it’s really easy to confuse the lines. It can look like a plate of spaghetti.”

Gilroy says DuPont has included proper tubing precautions into its competencies for staff.

“We have clearly put in an area that says we’ve gone over the importance of connecting tubes. If a staff member is confused, we urge [him or her] to seek resources or other staff for help,” she says.

Part of the education of staff should include sharing stories about near misses and mistakes made when connecting lines. The stories provide a real context for workers to better understand the issues involved, says Gilroy.

“We all think we have all this covered, but then you read something in BOPS or somewhere else and say, ‘That could happen here,’ ” she says.

Tracing lines to avoid errors
Gilroy says tracing the lines before making a connection can help to avoid mistakes.

The JCAHO’s alert recommends tracing back from the patient to the origin of the tubing, a method Gilroy endorses.

Beyond tracing back lines, staff should properly label each line to further reduce confusion. Janet Hosta, RN, MSN, professional development director at
Youville Hospital & Rehabilitation Center in Cambridge, MA, recommends using opaque tags whenever a patient is hooked up to more than one line or device.

“Tracing just isn’t enough sometimes,” says Hosta.

The JCAHO also recommends using colored lines to help avoid confusion, but warns against relying solely on color to differentiate the tubes.

Benjamin agreed that users should be careful and avoid opaque-colored lines.

Specifically, it can be difficult to see any particulate matter in the line, he said. Caregivers may also have problems with differentiating the colors.

Recheck these lines as well. The JCAHO recommends that the check be done as part of a patient handoff, which is one of the 2006 National Patient Safety Goal requirements.

Hosta says the checks should be conducted more often than that.

“Recheck connections every time they are disconnected or reconnected, not just at arrival or during the handoff process,” she says.

**Educate patients on the issue**

Gilroy says hospitals must teach patients and their family members that connecting lines is more complicated than it seems and that they should not try to fix a disconnected line.

“We let patients know [that] if there’s a disconnection, they should let the nurse know and not just hook it up themselves,” says Gilroy.

**JCAHO recommendations**

Other recommendations made by the JCAHO include the following:

- Avoid non-IV equipment that can connect to female luer line connectors.
- Test new tubing for interconnectivity and clearly identify misconnections risks.
- Trace lines from the patient back to the originating device before making the connection.
- Make connection checks part of your handoff process. The JCAHO goes further and recommends that such “line reconciliation” be standardized.
- Run individual tubes (e.g., IVs and GI tubes) in different directions to avoid confusion.
- Educate patients, family, and nonclinical staff about the dangers involved in misconnections and to ask for help if a line becomes disconnected.
- Label higher-risk catheters and lines. Avoid using tubes with injection points on those lines.
- Include misconnection information in training and orientation materials.
- Reduce worker fatigue in your facility.

**Types of misconnections**

In its alert, the JCAHO said misconnections could occur with central and peripheral IV catheters, nasogastric feeding tubes, percutaneous enteric feeding tubes, peritoneal dialysis catheters, tracheostomy cuff inflation tubes, and automatic blood pressure cuff insufflation tubes.

The JCAHO also noted that a USP review of more than 300 cases reported to its databases found the following misconnection errors:

- IV infusions connected to epidural lines and epidural solutions connected to peripheral or central IV catheters
- Bladder irrigation solutions using primary IV tubing connected as secondary infusions to peripheral or central IV catheters
- Infusions intended for IV administration connected to a Foley catheter
- Infusions intended for IV administration connected to nasogastric tubes
- IV solutions administered with blood administration sets and blood products transfused with primary IV tubing
- Primary IV solutions administered through various other dissimilar catheters (e.g., external dialysis catheters, a ventriculostomy drain, an amnio-infusion catheter, and the distal port of a pulmonary artery catheter)
JCAHO relaxes thresholds of allowable RFIs

The number of requirements for improvement (RFI) that hospitals may receive has increased, further relaxing revised thresholds the accreditor released in December 2005.

The change came as a surprise to the field and to JCAHO surveyors who say they had been using the recently-revised thresholds and were unaware that the JCAHO was planning to revise them again—and so soon. Since the January 2004 changeover to the new survey process, the thresholds have been revised annually.

The number of RFIs a hospital can receive before landing into conditional (CON) or preliminary denial of accreditation (PDA) was released to JCAHO surveyors on March 27 in an e-mail from Joseph Cappiello, JCAHO vice president of accreditation field operations.

Multiple copies of the e-mail were obtained by HCPro, Inc., and confirmed by the JCAHO. Since then, the JCAHO has notified hospitals about the change via e-mail and its Jayco extranet site; the May Perspectives also announces the adjustment.

The change took effect immediately and is retroactive to January 1. It was widely believed that this would mean an overturn of CON or PDA status for hospitals that may have received it this year. But of the more than 400 unannounced, full surveys completed since January 1, none has resulted in an adverse decision because final accreditation decisions were being held, according to Mark Forstneger, a JCAHO spokesperson. JCAHO’s Accreditation Committee made the change during its March 21 meeting.

“All potentially adverse hospital accreditation decisions generated as a result of 2006 surveys have been held in abeyance in anticipation of this threshold change,” Forstneger said. “These hospitals are now being notified of their accreditation decisions based upon these modified thresholds.”

Size now matters

For the first time, a distinction was made between “small” and “large” hospitals:

For **large hospitals** (i.e., those whose average daily census is equal to or greater than 100),
- CON is 14 RFIs, up from 10
- PDA is 20 RFIs, up from 15
- CON is 14 and PDA is 20 for Consolidated Licensing and Certification Survey in California (CALS)

For **small hospitals** (i.e., those whose average daily census is fewer than 100),
- CON is 11 RFIs, up from 10
- PDA is 16 RFIs, up from 15
- CON is 12 and PDA is 16 for CALS

The distinction between small and large was made based on RFI data from the 1,449 hospital surveys conducted during 2005, according to Cappiello’s announcement to surveyors. The data showed a “statistically significant” difference in the average number of RFIs between the two groups (see “A closer look at adverse decisions” on p. 7 for more about adverse decisions).

**Balance for large hospitals**

Hospital JCAHO coordinators and surveyors have believed for some time that the deck seemed stacked against large facilities.

Large hospitals may host three to five surveyors for up to a week, whereas small hospitals may see one or two surveyors for up to three days. More surveyors for more days may naturally lead to more findings.

“I really think this is great news for the hospitals,” says Elizabeth Di Giacomo-Geffers, RN, MPH, CNA, BC, a healthcare consultant. “I applaud the Joint Commission for [its] data collection [and] analysis and [for] then taking action.”

Di Giacomo-Geffers and others were left wondering why the JCAHO took the entire first quarter of 2006 to release the revised thresholds, but the delay was especially curious to already-surveyed facilities that were unsure whether their surveyor findings would lead to CON or PDA.
Another healthcare consultant, who wished to remain anonymous, made this analogy: “It’s like getting a cancer diagnosis and then the doctors taking it back; the damage may already have been done.”

But, the consultant added, “hospitals will be forgiving, especially if it means no chance of CON or PDA.”

Stressful first quarter
Hospitals surveyed so far this year may in fact have believed that their survey findings would lead to CON or PDA. When surveyors complete a hospital visit, they leave a copy of their report (i.e., findings). But a final decision about accreditation status isn’t made until the report is reviewed by a hospital’s JCAHO account representative.

Findings that may have been supplemental (i.e., suggested changes) can be scored up to RFIs during that process. That is why it’s important to clarify any findings that you can within the 10-day window given after the report is posted to the Jayco site using the JCAHO’s clarification process. Although no hospital in danger of CON or PDA agreed to speak to us about the RFI change, several consultants who work with them said there have been many unnecessary sleepless nights.

“It’s unfortunate that they had to wait until the end of the first quarter of the year to make it right for all of the people who’ve been on tenterhooks,” said Bud Pate, REHS, director of West Coast operations for The Greeley Company, a division of HCPro, Inc.

JCAHO spokesperson Forstneger said it was necessary for the Accreditation Committee, which is a subcommittee of the JCAHO Board of Commissioners, to review and approve the modifications, which is why the changes may have seemed delayed from what was announced in the December 2005 Perspectives.

A closer look at adverse decisions

Below are a sampling of the types of issues that can threaten a hospital’s accreditation status. Please refer to JCAHO’s Comprehensive Accreditation Manual for Hospitals for the exact wording of the rules. They can be found in the “Joint Commission’s Accreditation Process” section.

Jeopardy: If there is an immediate threat to safety, the JCAHO can use rule PDA01 to invoke preliminary denial of accreditation (PDA). Invoking this rule requires the approval of JCAHO executive leadership. Many things can constitute an immediate threat. For example, one hospital had the rule applied because the JCAHO did not clearly see a privilege awarded for a specific operative procedure. If an organization immediately corrects the threat to safety, the Accreditation Committee may decide to place the hospital in conditional denial of accreditation (CON) instead.

Lack of license: This is tied to HR.1.20 and seems straightforward enough, but it’s not always. If a caregiver (e.g., a nurse) is performing functions that the JCAHO believes are not allowed (e.g., following unclear medication orders), the JCAHO can and have invoked PDA02 to place the hospital on the denial-of-accreditation track. If this practice does not put patients at risk, the Accreditation Committee may decide to invoke CON02 and award CON instead.

Repeat CON: A second CON within six years leads to PDA (PDA04). That’s why it’s important for hospitals to make sure that CON is truly appropriate and clarify findings, if possible.

Other reasons for adverse actions:
- Falsification
- Failure to allow survey
- Failure to complete the periodic performance review (PPR)
- Failure to correct findings
- High medical records delinquency rate
- Failure to implement interim life safety measures
- Lack of progress on issues listed in Part 4 of the Statement of Conditions
TX hospital uses acronym to meet med review standard

To meet a JCAHO standard requiring the review of medications ordered during the pharmacist’s absence, a rural east Texas hospital developed an acronym to help nursing staff identify medications that can wait until the next day for pharmacist review.

Medication management standard MM.4.10 requires that all prescriptions or medication orders be reviewed for appropriateness. When a hospital pharmacy is closed overnight, the standard’s element of performance #3 states that a healthcare professional deemed qualified by the hospital will review the medication ordered during the pharmacist’s absence.

Staff use NUNE for routine meds
Staff at East Texas Medical Center (ETMC) in Athens use the acronym NUNE (nonurgent, nonemergent) for any routine or daily meds that can wait until the next day to be administered after the pharmacist reviews the order against the patient’s drug profile, says Melissa Lehman, RN, nursing performance improvement coordinator at the 117-bed facility. At night, “we have a small medication room with NUNE meds in it,” which cannot be entered by nonpharmacy personnel except during emergencies, she notes.

“Our process before was that the house supervisor did get the meds out of the night pharmacy,” says Lehman. But a consultant working with the hospital recommended ending that practice.

ETMC Athens’ medication management team developed the NUNE acronym and policy and was able to obtain leadership and staff buy-in fairly easily, she adds. “It wasn’t a hard sell,” says Lehman. “It’s very user-friendly for the nurses.”

New MAR form rolled out
As part of the revamped process, ETMC Athens also implemented a new medication administration record (MAR) form to be filled out for all newly prescribed medications (see p. 9 for a sample MAR). The form is used on admission of a patient and afterwards to document new medication training and response. In addition to using the NUNE acronym if the medication is unavailable after hours, staff must document that they received training for the new medication, including the medication ordered, dose, route and frequency, efficacy side effects, and special considerations.

Each shift must enter its evaluation of patient reactions to the new medication (e.g., nausea, vomiting, rash, and shortness of breath). The nurse should also indicate whether the med was effective and whether there was an adverse reaction.

Since the new process was implemented in fall 2005, the number of nonpharmacist entries into the night pharmacy has decreased to one or two per quarter, says Lehman. Prior to the new process, “it was considerably more than that,” she adds. If there are any medications that must be administered overnight, the house supervisor reviews the order and the meds are then given to the patient.

Previously, staff didn’t realize that they should not go into the night pharmacy unless absolutely necessary, Lehman says. The new process and form force nurses to think twice about whether the medications can wait until morning. ETMC had an unannounced JCAHO survey in January and the surveyor liked the form, notes Lehman.
# Medication administration record

<table>
<thead>
<tr>
<th>No.</th>
<th>Medication</th>
<th>Start/Stop</th>
<th>Init. Entry</th>
<th>First shift</th>
<th>Second shift</th>
<th>Third shift</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Teaching for new med.</td>
<td>Patient evaluation of new medication</td>
<td>Time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teaching for new med.</td>
<td>Patient evaluation of new medication</td>
<td>Time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teaching for new med.</td>
<td>Patient evaluation of new medication</td>
<td>Time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teaching for new med.</td>
<td>Patient evaluation of new medication</td>
<td>Time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teaching for new med.</td>
<td>Patient evaluation of new medication</td>
<td>Time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teaching for new med.</td>
<td>Patient evaluation of new medication</td>
<td>Time</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Teaching for NEW medication includes:**
- Medication ordered, dose, route and freq., effect, side effect, and special considerations
- Documentation of medications not available after hours: NURSE—nonurgent, nonemergent

<table>
<thead>
<tr>
<th>RD</th>
<th>Right deltoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD</td>
<td>Left deltoid</td>
</tr>
<tr>
<td>RDT</td>
<td>Right dorsal thigh</td>
</tr>
<tr>
<td>LDT</td>
<td>Left dorsal thigh</td>
</tr>
<tr>
<td>LUQ</td>
<td>Left upper quad.</td>
</tr>
<tr>
<td>RUQ</td>
<td>Right upper quad.</td>
</tr>
<tr>
<td>RA</td>
<td>Right abdomen</td>
</tr>
<tr>
<td>LA</td>
<td>Left abdomen</td>
</tr>
<tr>
<td>RL7</td>
<td>Right lateral thigh</td>
</tr>
<tr>
<td>LL7</td>
<td>Left lateral thigh</td>
</tr>
</tbody>
</table>

**Initials**

<table>
<thead>
<tr>
<th>Initials (1st shift)</th>
<th>Initials (2nd shift)</th>
<th>Initials (3rd shift)</th>
</tr>
</thead>
</table>

**Signature**

<table>
<thead>
<tr>
<th>Signature</th>
<th>Signature</th>
<th>Signature</th>
</tr>
</thead>
</table>

Source: ETMC Athens. Reprinted with permission
Designing data collection forms to improve quality

Many quality improvement efforts fail because a process to collect the data (and the resources to support that process) is not identified at the beginning.

The data collection system and resources should be stable—built to last indefinitely. You can make data collection easier by using data collection forms.

These forms allow you to collect the data that you want simply and systematically. They reduce the chances of error and provide a backup resource should you question any data accuracy.

When you design data collection forms for a ratio measure, collect data about each numerator and denominator.

Doing so is relatively easy when you have only one ratio measure. The difficulty arises when you have multiple ratio measures, including some with varying denominators.

Therefore, before designing a data collection form, make sure that you know where the data will come from, how the form will be used, and who will use it.

Are the data being captured electronically? What is the level of aggregation (e.g., individual office, entire department, the hospital overall, or multiple hospitals) in collecting the data? Multiple forms may be sent to one source for aggregation.

Test initial data tabulations before designing a final data collection form. This includes getting input from those who will use the form.

The final form should be as detailed as possible, and someone who initially tested the form should be assigned as the data collector.

Consider the example of one of our quality measures when the numerator was either a patient's ability to follow commands or sedation that has been withheld from the patient for 12 hours. We initially failed to provide a detailed operational definition of “follow commands.”

When the forms were pilot-tested, the results were inaccurate and confusing. We corrected the oversight, and our accuracy improved. Following are tips for designing data collection forms:

- Include all of the information needed as you collect the data. It should describe the who, what, where, when, and why of data collection.
- Be as specific as possible. Try to eliminate judgment in data collection.
- Collect only data that are needed to calculate your measure.

Avoid the tendency to collect information that would simply be nice to know. The key word here is “nice,” not “necessary.” Such information rarely adds value, but usually adds burden in data collection.

However, you may occasionally need to collect additional data to risk-adjust your measure or stratify results. For example, if you want to compare performance in two patient care areas, collect data about the area in which the patient is located.

A sample data collection form is given on p. 11. Because of the effort required to obtain patient information, a sample size of only 20 patients per month was recommended.

About the book

This excerpt was from Quality Measurement: A Practical Guide for the Pharmacy by David M. Kellogg, MS, DPh, ©2006 HCPro, Inc. The book is part of HCPro's best-selling “Quality Measurement” series. For more information about how to purchase this book call our Customer Service Department at 800/650-6787.
### Sample ADE collection form

<table>
<thead>
<tr>
<th>Patient in Random Sample</th>
<th>Total Doses</th>
<th>Trigger Found T1-T24</th>
<th>Total ADEs</th>
<th>Harm Category E,F,G,H,I</th>
<th>Description of ADE, If Found</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pt. #1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pt. #20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Harm Category:
  - Category E: contributed to or resulted in temporary harm to the patient and required intervention
  - Category F: contributed to or resulted in temporary harm to the patient and required initial or prolonged hospitalization
  - Category G: contributed to or resulted in permanent patient harm
  - Category H: required intervention to sustain life
  - Category I: contributed to the patient’s death

**Steps:**
1. Define the inpatient system of care as the entire set of hospital-based, inpatient care, clinical units that the health system is responsible for operating. Inpatient clinical units include places that provide hospital services such as community hospitals, tertiary medical centers, academic medical centers, children’s hospitals, etc.
2. For each month, identify all patients who have a length of stay in the hospital of 2 or more days.
3. Select a random sample of 20 medical records for chart review.
4. Review charts to identify any ADE “triggers” and to count the number of doses delivered to the patient.
5. If a chart has a positive trigger, determine if it is associated with an ADE that causes harm and classify the category of harm.
6. Use the count of total doses and the count of ADEs to provide an estimate of ADEs per 1000 doses.
7. Plot this number monthly on a trend chart, (run chart or control chart).

FDA proposes regs to prevent medical gas errors

To prevent deaths and injuries from inadvertent use of incorrect or contaminated medical gas, the Food and Drug Administration (FDA) in April issued a proposed rule designed to make the contents of medical gas containers easier to identify.

Medical gases (e.g., oxygen, nitrous oxide, and nitrogen) are administered to patients in healthcare facilities and the home for various purposes. In some cases, injury or death has resulted from medical gas mix-ups caused by one of several factors, such as:

- mistaken administration of industrial gas to patients
- improper connection of industrial gases to medical oxygen supply systems
- contamination of medical gas cylinders with residues of industrial cleaning solvents

Between 1996 and 2006, the FDA received reports of medical gas mix-ups that resulted in at least eight deaths and 18 serious injuries. “By issuing this proposal, the FDA is heightening consumer and industry awareness about this specialty area of regulated products,” said Steven Galson, MD, director of the FDA’s Center for Drug Evaluation and Research, in a press release.

The new regulation would apply to medical gas manufacturers and distributors and will require that certain medical gas containers

- have gas use outlet connections (which are used to connect the containers to gas supply systems) that cannot be readily removed
- be identified by labels that wrap all the way around the container tops
- have high-pressure medical gas cylinders painted according to a standard color-coding system that corresponds to the gases stored in them
- be dedicated to medical use and not converted from industrial use

Public comments about the proposed regulation will be accepted until July 10 before the FDA develops the final rule. For more information, visit www.fda.gov/cder/dmpq/MedGas_QA_20060410.htm.

Hospital Pharmacy Regulation Report

Editorial Advisory Board

David Benjamin, PhD
Clinical Pharmacologist/Toxicologist
Chestnut Hill, MA

Diane Cousins, RPh
Vice president, Center for the Advancement of Patient Safety
U.S. Pharmacopeia
Rockville, MD

Michael Hoying, RPh, MS
Pharmacy Director
Fairview and Lutheran Hospitals
Cleveland, OH

Kurt Patton, MS, RPh
Principal
Patton Healthcare Consulting
Glendale, AZ

James O’Donnell, PharmD, MS
Associate Professor of Pharmacy
Rush University Medical Center
Chicago, IL

William Sarraille, Esq.
Sidley Austin Brown & Wood, LLP
Washington, DC

Donna Soflin, PharmD
Director of Pharmacy
Tri-County Hospital
Lexington, NE

Douglas Wong, PharmD
Pharmacy Healthcare Solutions
AmerisourceBergen Corporation
Fort Washington, PA

Hospital Pharmacy Regulation Report is published monthly by HCPro, Inc., 200 Hoods Lane, P.O. Box 1168, Marblehead, MA 01945. Subscription rate: $299/year or $538/two years. © Copyright 2006 HCPro, Inc. All rights reserved. Printed in the USA. Except where specifically encouraged, no part of this publication may be reproduced, in any form or by any means, without prior written consent of HCPro, Inc., or the Copyright Clearance Center at 978/750-8400. Please notify us immediately if you have received an unauthorized copy. © For editorial comments or questions, call 781/639-1872 or fax 781/639-2982. For renewal or subscription information, call customer service at 800/650-6787, fax 800/639-8511, or e-mail customerservice@hcpro.com. © Occasionally, we make our subscriber list available to select companies/vendors. If you do not wish to be included on this mailing list, please write to the Marketing Department at the address above. © Opinions expressed are not necessarily those of HPRR. Mention of products and services does not constitute endorsement. Advice given is general, and readers should consult professional counsel for specific legal, ethical, or clinical questions.

For news and story ideas:
Contact Senior Managing Editor Jay Kumar
- Phone: 781/639-1872, Ext. 3144
- Mail: 200 Hoods Lane, Marblehead, MA 01945
- E-mail: jkumar@hcpro.com
- Fax: 781/639-2982

Group Publisher: John Novack

Online resources:
- Web site: www.hcpro.com
- Access to past issues: www.hcpro.com/onlinepubs

Subscriber services and back issues:
For new subscriptions, renewals, changes of address, back issues, billing questions, or permission to reproduce any part of Hospital Pharmacy Regulation Report, please call customer service at 800/650-6787.