FOR MORE THAN 25 YEARS

DRUG FORMULARY R•E•V•I•E•W™

Utilization, Criteria and Outcomes

AHC Media LLC

IN THIS ISSUE

MARCH 2010
VOL. 26, NO. 3 • (pages 25-36)

Hospitals involve pharmacists in care of indigent patients

Pharmacists' involvement helps improve outcomes, costs

Hospitals that serve populations that traditionally have difficulty affording primary care now are seeing their indigent populations swell as the recession has hit those with hard luck even harder.

Some health care systems have found that including pharmacists in the care of these patients can improve outcomes and help reduce hospitalizations and costs.

"We look at our hospitalizations every month to see if there's anyone from our clinic who has been hospitalized due to any issue," says **Sherry Martin**, PharmD, the outpatient pharmacy operations coordinator at The Medical Center Inc., which is part of the Columbus Regional Healthcare System in Columbus, GA.

"A patient can be referred to a pharmacist based on their hospitalization if medication therapy is related or due to an uncontrolled disease state," Martin says.

The Medical Center's Outpatient Clinic and Ambulatory Care Pharmacy were established to provide primary care to uninsured patients, and, at the same time, deliver cost-effective therapy while keeping patients out of the hospital, Martin says.

Summary points

- Pharmacists can assist with programs serving indigent.
- Pharmacists spend more time with chronically ill patients than physicians can.
- Programs help reduce hospital's costs through prevention and follow-up care.

Since these patients have no insurance and no resources to pay for their own care, the Outpatient Clinic and Ambulatory Care Pharmacy are funded through a city-county grant, she adds.

The pharmacy and clinic were established based on the theory that if someone provided preventive services on an outpatient basis to patients, then there would be fewer

indigent patients going to the hospital emergency room for primary care, says **Lori Hornsby**, PharmD, BCPS, an assistant clinical professor with the Harrison School of Pharmacy at Auburn University in Auburn, AL. Hornsby also is an ambulatory clinical pharmacist with the Columbus Regional Healthcare System.

"The thought is that providing these services will help us decrease hospitalizations and ER visits," Hornsby says. "However, we have found this difficult to track as many of these patients transition in and out of our system."

The Family Practice Clinic and Family Health Pharmacy, which also are associated with The Medical Center and Columbus Regional Healthcare System, see some indigent patients, but the clinic's population is slightly more diverse economically, says **Jamie Thompson**, PharmD, BCPS, ambulatory care clinical pharmacist at the Family Practice Clinic and Family Health Pharmacy.

"The Family Practice Clinic is a medical residency program with 30 medical residents and attending physicians, and it serves as a training site for pharmacy residents and students," Thompson says. "We've had a pharmacist in the clinic for over 10 years."

The clinic's pharmacists help with patient-assistance programs and work to obtain low-cost medications through drug companies and other sources, she says.

"Since a lot of our people can't afford their medications, we work with physicians to assure that they are receiving the most cost-effective medication therapy," Thompson says.

One of the issues with dealing with indigent populations is that funding usually comes from various sources, meaning that not all patients can be seen by one particular site.

For instance, the Family Practice Clinic and Family Health Pharmacy see patients from outside counties because they receive some state funding, but the Outpatient Clinic and Ambulatory Care Pharmacy, funded by the county and city, serve only people who live within Muscogee County, GA, Martin says.

"Each clinic has a separate pharmacy, but the goals of the pharmacy department in both clinics are the same," Martin says.

Here is how the clinics work:

• **Family Practice Clinic:** "There are two pharmacists here in this clinic, and we have patients scheduled to see us every day of the week," Thompson says.

"We see 98% of the patients who come to the clinic for anticoagulation management," she says.

A large portion of what we do is diabetes management, hypertension management, and hyperlipidemia management," she adds. "The other types of physician referrals we receive involve medication compliance and reducing costs of medications."

The pharmacists spend 30 minutes with patients on average, although anticoagulation management visits sometimes are shorter, and diabetes management visits take a little longer, Thompson says.

"For diabetes we talk about whether they're checking their blood sugars and keeping their values in range," she explains. "We make sure they understand what their medications are prescribed for and why it's important to take them and obtain good control of their diabetes."

The pharmacists also will make sure patients know how to improve their overall health and how important it is to lose weight and stop smok-

Drug Formulary Review (ISSN#1548-2790) is published monthly by AHC Media LLC, 3525 Piedmont Road, Building Six, Suite 400, Atlanta, GA 30305. Telephone: (404) 262-7436. Periodicals Postage Paid at Atlanta, GA 30304 and at additional mailing offices.

POSTMASTER: Send address changes to Drug Formulary Review, P.O. Box 740059, Atlanta, GA 30374.

Subscriber Information

Customer Service: (800) 688-2421 or fax (800) 284-3291, (customerservice@ahcmedia.com) **Hours of operation:** 8:30 a.m.-6 p.m. Monday-Thursday; 8:30 a.m.-4:30 p.m. Friday.

Subscription rates: One year (12 issues), $499. Add $17.95 for shipping & handling. Outside U.S., add $30 per year, total prepaid in U.S. funds. Discounts are available for group subscriptions, multiple copies, site-licenses or electronic distribution. For pricing information, call Tria Kreutzer at 404-262-5482. Missing issues will be fulfilled by customer service free of charge when contacted within one month of the missing issue date. **Back issues**, when available, are $83 each. (GST registration number R128870672.)

Editor: **Melinda Young**.
Associate Publisher: **Coles McKagen**, (404) 262-5420, (coles.mckagen@ahcmedia.com).
Senior Managing Editor: **Paula Cousins**, (404) 262-5468, (paula.cousins@ahcmedia.com).
Director of Marketing: **Schandale Kornegay.**
Production Editor: **Ami Sutaria**.

Editorial Questions

Questions or comments? Call **Paula Cousins** at (404) 262-5468.

ing, if appropriate, Thompson says.

"Usually patients bring in their medication bottles with them, and we ensure they're taking their medications correctly," she adds. "We evaluate for any changes needed in their medication therapy and keep them up to date on all their lab work."

With new referrals they keep track of their initial diabetes control and then subsequent testing when they return.

Patients determined to be well-controlled will be seen every 3-6 months to make sure they're receiving regular follow-up, Thompson says.

For patients who have more severe diabetes, the pharmacists will schedule more frequent visits, sometimes even once a week, she adds.

• **Outpatient Clinic and Ambulatory Care Pharmacy:** When patients first are enrolled in the outpatient clinic program they're seen by either a physician or physician extender, Hornsby says.

"Patients found to have certain chronic disease states are automatically referred to us," she says.

Patients are generally referred for diabetes, hypertension, hyperlipidemia, asthma, chronic obstructive pulmonary disease (COPD), hepatitis C, and congestive heart failure. The clinic provides smoking-cessation, weight-management, and anticoagulation service. **(See story about clinic's disease management programs, right.)**

The clinic's staff also includes pharmacy residents and fourth-year pharmacy students from surrounding pharmacy schools.

"A lot of what we do is train medical and pharmacy residents and pharmacy students to manage these patients, as well," Hornsby says. "Pharmacy residents conduct a large percentage of our visits with the oversight of the ambulatory clinical pharmacist."

The clinic also has three physicians and a nurse practitioner.

"We work with physicians to assess patients' disease control, their understanding of the disease, and their compliance," Hornsby says.

"We are also able to adjust medication therapy when necessary," she adds.

"We have a very unique setting — a utopian pharmacy — where patients receive their medical care and medications from a clinic and pharmacy located in the same building," she explains. "If there are ever any questions about their medications or medical care, these issues can be easily resolved since all providers are in the same location."

The outpatient clinic's goal is to serve the county's indigent while reducing the hospital's costs in providing care for uninsured patients, Martin notes.

"We're a 340B Disproportionate Share Hospital, and we're always very conscious of cost savings," Martin says. "We've been involved in patient assistance programs sponsored by drug manufacturers for many years, providing medications to patients at little or no cost."

Now the hospital is seeing an increase in the influx of indigent patients, particularly in the Outpatient Clinic and Ambulatory Care Pharmacy.

In the past year, the clinic's patient population has swelled with several new patients each day, she says.

"Our volume has grown because of the economy and people losing their jobs," Martin says.

"We have many people in the community who have found themselves unemployed," she adds. "These were people who previously had health insurance benefits, and now they're here in our clinic for the uninsured." ■

Disease management program relies heavily on pharmacist care, education

Clinic focuses on diabetes and anticoagulation therapy

When hospitals expand to outpatient clinics that focus on chronic disease management, it is an ideal opportunity for pharmacists to fulfill a major role.

Pharmacists and pharmacy residents and students who work at the Outpatient Clinic and Ambulatory Care Pharmacy, which is part of Columbus Regional Healthcare System in Columbus, GA, provide medication management and disease management care to indigent patients, ultimately saving the health care system money.

Summary points

- Education is chief part of diabetes management.
- Pharmacists use point-of-care monitoring machine for anticoagulation therapy patients.
- Physicians and pharmacists working together help provide good primary care for indigent patients.

Here are some of the areas of focus and how it works:

• **Diabetes management:** "The large component of diabetes management is education, making sure patients have the ability to handle self-management issues," says **Lori Hornsby**, PharmD, BCPS, an assistant clinical professor with the Harrison School of Pharmacy at Auburn University in Auburn, AL. Hornsby also is an ambulatory clinical pharmacist with the Columbus Regional Healthcare System.

The pharmacist ensures that diabetic patients receive blood glucose monitors and education on proper use.

"We also provide extensive education to include diabetes-related complications, the goals of therapy, dietary information, and medication counseling," Hornsby says. "We work collaboratively with patient's physicians to ensure they are on appropriate therapy, adjust medications if needed, and track success through A1c values."

Follow-up varies. Patients who are beginning insulin therapy may be seen the next week, and those who are using monitors for the first time may be seen in two weeks. Better controlled patients might be seen every four weeks, she adds.

For better controlled patients, they might be seen every 2-4 weeks.

"This is one of the benefits of having pharmacists involved in diabetes management," Hornsby notes. "Follow-up with physicians is often extended."

Also, the pharmacists' visits supplement physician visits, providing more oversight.

• **Anticoagulation therapy:** Like many hospital systems, Columbus Regional Healthcare System has many patients who are admitted to the hospital or emergency room with problems from their anticoagulation medications, Hornsby says.

A small change in their medications can have a big impact, so it's important to have pharmacists involved in anticoagulation treatment management.

"All patients who come in on anticoagulation therapy are referred to us," Hornsby says. "We've been following the recent Joint Commission [of Oakbrook Terrace, IL] guidelines for 10-plus years."

As patients bring anticoagulation prescriptions into the dispensing pharmacy, the staff ensures that these patients are scheduled an appointment for follow-up with the ambulatory clinical pharmacist in the Outpatient Clinic, she adds.

Pharmacists ensure anticoagulation patients are aware of drug-drug and drug-food interactions.

Patients are encouraged to be consistent in their dietary choices and to discuss all changes in prescription and over-the-counter medications with their pharmacist, Hornsby says.

"We make sure patients are educated and that they understand the risks and benefits of therapy," Hornsby says. "We teach them about the risks of bleeding, how to monitor for signs and symptoms of bleeding, and when to seek medical attention."

Initial visits average 30-60 minutes, depending on the patient's understanding of their therapy and whether or not they're experiencing confusion, she says.

The clinic has a point-of-care monitoring machine that is utilized by the pharmacists. When the patient's blood is entered into the machine there is an automatic reading in 10-15 seconds, so pharmacists have instant information necessary for making therapeutic decisions, explains **Sherry Martin**, PharmD, the outpatient pharmacy operations coordinator at The Medical Center Inc., which is part of the Columbus Regional Healthcare System in Columbus, GA.

The immediate results allow for real-time assessment and management, which avoids the need for follow-up calls and to track down patients when utilizing other methods, Hornsby notes.

The clinic follows patients closely, calling them if they haven't returned for follow-up, she adds.

"For patients who haven't been coming to have their lab work done, the dispensing pharmacy can flag their prescriptions so that patients can be directed to consult with a pharmacist to order follow-up labs before prescriptions are refilled," she says.

"Patients who are new to anticoagulation therapy are seen once a week for several weeks," Hornsby says. "Then the goal is to get them where they come in once a month because even patients who are very stable usually need monthly follow-up care."

It is a challenge in today's environment to provide cost-effective primary care to low-income patients, Hornsby says.

"Physicians and pharmacists working together in a collaborative practice, utilizing 340B drug pricing, and accessing patient assistance programs allow Columbus Regional Healthcare System to provide excellent patient care for their low-income patients," she adds. ■

When building pharmacy department value, it pays to think outside the box

Improve your communication skills

When a chief goal is to build the pharmacy department's value within a health care system, one of the primary roles pharmacy directors play is that of communicator.

"We convince people all day long to do things they might not want to do," says **Susan D. Bear**, PharmD, director of clinical pharmacy services for Carolinas HealthCare System in Charlotte, NC.

"The pharmacy department commands a large portion of expenses in hospital and revenue," Bear says. "We're integral in everything in a health care organization, and so we have to advocate for our interest, as well as for our department's interest."

Pharmacy directors need to network with human resources managers, information technology staff, as well as clinicians, says **Robert Carta**, assistant vice president of the division of pharmacy services at Carolinas HealthCare System.

"One way you learn is through networking," Carta says.

Pharmacy directors need to observe meetings in which other department heads ask for changes, learning from their proposals and how they are received, he adds.

"It's how you ask for it and how you present things in a way that your senior leadership thinks in that direction," Bear says.

Also, an important goal is to develop credibility, and this takes both communication and action.

"You have to be successful operationally," Carta says. "You have to build a solid distribution system and develop credibility in terms of pharmacist expertise and distribution of product."

Once a pharmacy demonstrates excellence in this area, then it's time to build clinical roles, he adds.

"Once you build your foundation, the next thing you know the human resources department hears about how you've done, and they call you in and ask you to sit in on their benefit meeting," Bear says. "And information technology people call and want to hear your input on design of the pharmacy information system."

Carta spent years building credibility and a good reputation as a leader before asking the health system's top executives to consider letting his department build a system for handling employee medications rather than continue to send this role to a third party.

The goal was to bring the whole function in-house to save money on the health system's medication benefit costs. **(See story on an in-house employee medication system, p. 30.)**

"When I was proposing this I was invited to employee hospital system committee meetings, and I was invited through an e-mail outlook exchange," Carta says. "I kept showing up at the meetings and automatically became a member of the committee."

Sometimes pharmacy directors have to put themselves in places that might be a little awkward, but if they speak up intelligently, then they eventually will become a member of the committee, he adds.

"It goes back to thinking outside the box," Carta says. "We need to zero in on all of these expenses, and identify other opportunities."

This is an example of achieving success by identifying influential people, getting to the table with them, and, over time, establishing a personal track record with them, Bear notes.

A good pharmacy leader, like Carta, knows what various other health care system leaders will propose and what they'll say "yes" and "no" to, Bear adds.

Carta's plan was to bring employee medication fulfillment in-house, so he presented it as a way to benefit the human resources department to meet their goals, she says.

"And we came out the winner," she adds.

In another example, a pharmacy leader might desire to have a pharmacist be the point person for a new chronic disease management program, such as a diabetes management initiative.

Others sitting at the table believe their own staff could take the lead, so the nursing department proposes that a nurse heads the project, physicians propose having a doctor take the lead, and quality improvement leaders want to be in

Summary points

- Pharmacy commands major portion of hospital expenses and revenue.
- Pharmacy directors need to network with human resources managers, information technology staff, and clinicians.
- Demonstrate excellence, then expand clinical role.

charge, as well.

"You have to go in and steer the question in your direction," Carta says. "Pharmacy should be the point person."

So when Carta was in this situation, he promoted clinical pharmacy by showing that pharmacists are in the best position to make the new project happen quickly and most efficiently, while maintaining relevant pieces for other disciplines.

"We decided pharmacists will take a lead role and start out with diabetic patients," Bear says.

"We start with small successes, getting those under our belt, and then develop a good personal track record," Bear says.

"So when administrators say revenues are down, expenses are up, and we need to cut costs, that's when a good pharmacy director says, 'Wait a minute, only 20% of my total pharmacy expenses are in salaries, so you won't get a big bang by cutting staff,'" Carta says. "You have to cut drug costs, and to do that you hire more pharmacists." ■

Health system pharmacy becomes mail-order pharmacy for employee meds

System saves $2.4 million

Pharmacies in larger health care systems can broaden their own mission and save the health system money by taking on roles that typically are handled through outside vendor contracts.

For example, the Carolinas HealthCare System of Charlotte, NC, saved $2.4 million in expenses over three years by starting an in-house mail-order pharmacy program that handles medications for the hospital's thousands of employees and dependents, says **Robert Carta**, assistant vice president of the division of pharmacy services at Carolinas HealthCare System.

"We have 29 hospitals and are keeping this in-network now," Carta says. "We can purchase drugs at the hospital's prices with a substantial discount."

There are 36,000 members who receive their medications from the mail-order pharmacy, Carta notes.

"We spend in retail and mail-order pharmacy about $34 million on employee medications," he adds.

Summary points

- Health system saved $2.4 million in expenses over 3 years with in-house mail-order pharmacy.
- Pharmacy plan has 36,000 members.
- One key to cost savings is giving employees big incentive to use generics.

Pharmacy directors typically do not think about medication costs associated with employee benefits. But Carta saw this as a revenue source and way to control expenses.

"The real issue is we have these internal resources, and we have them in every health care organization," Carta says. "So why hire consultants to develop prior authorization, clinical initiatives, and co-pays when we do that every day?"

Also, the pharmacy department knows how to buy drugs at the cheapest costs, he adds.

"We knew we could buy them cheaper than we could ever get in a deal with one of the big mail-order houses," Carta says.

An analysis of the costs of the top 100 medications prescribed to employees and covered family members showed a tremendous potential savings by moving this service in-house, he says.

For example, some of the large mail-order pharmacy contractors receive rebate incentives from pharmaceutical companies to push one type of brand drug over another. The health system mail-order pharmacy can save money by putting generic drugs on its formulary since it saves the health system overall by not opting for the rebates, Carta explains.

"If I put a branded statin drug on the formulary, it might cost $3 a tablet while a generic statin costs 2cents a tablet," he says.

Even after a rebate, the branded drug might cost 98cents more than the generic drug, so it benefits the health system to encourage use of the generic drug, he adds.

The health system does this by offering the generic drug, which costs 2cents per tablet for free to employees, says **Susan D. Bear**, PharmD, director of clinical pharmacy services for Carolinas HealthCare System.

For people who have five or six different medications and who would otherwise have co-pays for each, the free generic drugs can result in a considerable savings, she notes.

"We also were able to decrease co-pays to employees and offer some incentives that they didn't have before," Bear says. "For example,

their mail-order drugs arrive in 2-3 days because the pharmacy is right here in town, and we offer them 30-day refills through the mail-order pharmacy, when most people offer 90 day refills."

For employees, the 90-day refill is a big expense, and having a 30-day refill option allows them to budget their money more effectively, Bear adds.

Since the in-house mail-order pharmacy's goals are to save money for the overall health system and not just to make profits for its own entity, the way it does business is slightly different than the way contract mail-order pharmacies might do business.

Carta spent two years learning as much as he could about human resources health plan benefits and the business of running a mail-order pharmacy before opening the mail-order pharmacy.

"I knew we could save the organization money by bringing this in house," Carta says. "But more importantly, this is a long-term vision: The vision of this mail-order pharmacy was to save money for the organization and to really get into the lead in managing drug therapy by clinical pharmacists."

Health system pharmacy directors institute clinical initiatives into their hospitals every day, but they don't offer clinical initiatives to employees, he notes.

"We have the employees' adherence and prescription information; we own their data, so shouldn't we be doing something with all these data?" Carta says.

Carta's research paid off. The health system decided to start the in-house mail-order pharmacy business, which now employs 16 people and is its own self-contained business unit.

"Once you receive the capital funding to build the building and install an automated information technologies system, then that's the one-time expense hit," Carta says. "You justify it by saying, 'This is what it costs to run drug inventory, staff an IT system, and use a claims processor to process claims."

Carolinas HealthCare System has its own internal architectural and business management departments, which helped with the front-end work and costs, he adds.

"A single hospital system probably could put 1,000 square feet of space within the hospital and call it an employee pharmacy and do the same thing," Carta says.

Even this down-sized version of a mail-order pharmacy would save a hospital money, he adds.

So far the in-house mail-order pharmacy has been successful from both a cost-savings and an employee satisfaction perspective, he says.

"The best part is our employees pick up the phone and talk to a pharmacist who works for Carolina HealthCare System," Carta adds. "It makes a difference to them to know we work for their same health system." ■

Budgeting Pointers

Pharmacy managers need to embrace financial management skills

Good budgets start with good leadership

Pharmacy managers need to embrace the notion that one part of their skills has to include financial management and creating a proper budget, an expert advises.

"We probably all got into this profession because we wanted to improve the health care of patients, but we chose management as a specialty because we thought we had leadership potential," says **Steven B. Cano**, MS, RPh, FASHP, senior director of pharmacy and chief pharmacy officer at Cambridge Health Alliance in Cambridge, MA.

But part of leadership and management is handling a budget, and this is an area in which some pharmacy leaders need improvement.

"It's a challenge and a tactical exercise, a way of saying, 'This is how I'm going to manage the pharmacy department's money,'" Cano says.

"What pharmacy managers don't do as good a job of doing is strategic budgeting and looking three years out," he says. "Ask yourself, 'How does our financial position help us or hinder us from attaining our strategic goals?'"

A first step is to develop constructive relationships with hospital

Summary points

- Pharmacy leaders could improve budgeting skills.
- Put organization's interests ahead of pharmacy interests.
- Do self-assessments to look at programs that might no longer be working.

leaders.

"You can pick up a textbook about creating a budget, but the art to all of this is creating a relationship with the decision makers in an organization where you're considered essential to the health of the organization," Cano says. "If you manage that relationship then we all do well, and if you mismanage that relationship then it will eventually catch up with you and not produce a good outcome."

Financial planning that's done without considering goals, including the goal of continuing to build trust with hospital leaders, is incomplete.

Cano offers a few suggestions for how to improve budgeting and financial planning:

• **Put your organization's interests first.**

"Another challenge is really being willing as a pharmacy manager to put the organization's interest ahead of your own professional interest," Cano says. "We're interested in furthering the profession, but when it comes to the budget, it's inappropriate to put your own personal objective ahead of the organization."

For example, a pharmacy director's goal might be to expand the department's clinical services, and he or she sees an opportunity to create an anticoagulation clinic, he says.

"Let's say the organization says, 'Propose a service, and let's see what happens,'" Cano says. "You are aware that pharmacists do a fine job of managing these clinics, but you know that nurse practitioners also do a good job."

If pharmacy directors look out for only the pharmacy department's interest, then they might recommend the hospital hire a pharmacist for the job as the only option.

"But what if a nurse practitioner costs the organization less and would do as good a job as a pharmacist?" Cano says. "So what are you willing to suggest?"

It's irresponsible for pharmacy directors to use their good reputations and cultivated trust among hospital leaders to push through programs that will benefit the pharmacy but not the hospital, Cano adds.

Most of the time this type of choice isn't an issue since most programs that benefit the pharmacy will benefit the hospital too, he notes.

"You can accomplish things for the pharmacy that are good for the organization," Cano adds. "But there are times when there might be better ways of doing things than what you have planned."

• **Do self-assessments.**

In many organizations there often are so many competing priorities that administrators fail to pay attention to new programs after their initial launch, Cano notes.

"So it's incumbent on you to do a self-evaluation to bring value to the program," he says.

There likely are programs that were great 10 years ago, but are not working as successfully today, he adds.

It's tough to admit that perhaps a program should be changed or discontinued, but recognizing these realities is part of a pharmacy leader's job, Cano says.

"You can say, 'I've redeployed that resource,'" he suggests. "Acknowledge that we're not spending as much time on that program so you've asked the pharmacist to do something else that will add value to the organization."

• **Consider future national trends.**

Pharmacy directors need to be aware of the broader environment and understand what is broken in U.S. health care, Cano says.

"To understand what's wrong with the current environment, you need to understand what's going on in health care financing," he says. "It's really in everyone's best interest to understand what health care reform will mean and how changes will impact the flow of money in and out of an organization."

Pharmacy leaders should keep up with federal changes to health care as part of their efforts to plan for the future. This includes strategic planning and writing budgets that go out as far as three years, Cano suggests.

"In the context of health care reform, pharmacists have a great opportunity to step in and play a heightened role because busy primary care physicians can't always focus on things like anticoagulation management," he says. "In my personal opinion, we've never had the opportunity we have now, which is being driven by health care reform."

Pharmacists can take on the role of focusing on specific medications, understanding their costs, and keeping up with the literature on their optimal use with hospital patients.

If it appears there will be national health care changes in how medical care is paid, such as a move away from fee for service, then pharmacy leaders should be prepared to come up with strategies to handle these changes.

Some thought leaders say the current health care system should move to capitated care, and if that happens then there will be greater incentives

for good quality care that is delivered in the most cost-efficient way possible, Cano says.

"In that scenario, pharmacists play a huge role because they are less expensive than physicians, and they're not likely to waste resources," he says. "So they have a great opportunity there." ■

Guidelines on preventing errors in chemotherapy now being revised

Emphasis on oral chemotherapy

It's been over a decade since experts were invited to write specialty guidelines regarding preventing medication errors with antineoplastic agents. And now the guidelines are dated, and experts have been working on an update that includes the impact of new technology.

The American Society of Health-System Pharmacists (ASHP) published the *Practice Guidelines on Preventing Errors in the Use of Antineoplastic Medications* in 2001.

"One of the new technologies is computerized prescriber order entry (CPOE)," says **Robert DeChristoforo**, MS, FASHP, chief pharmacist at the National Institutes of Health Clinical Center in Bethesda, MD. DeChristoforo presented information about the proposed revisions at the 44th ASHP Midyear Clinical Meeting and Exhibition, held in Las Vegas, NV, Dec. 6-10, 2009.

Approximately 15% of hospitals have CPOE, and there are other new technologies like smart pumps, so the old guidelines did not include these," DeChristoforo says. "Also, the guidelines published in 2001 didn't emphasize enough of the oral products."

So DeChristoforo and co-authors added two new sections to the proposed guidelines, covering new technology and oral chemotherapy.

"We emphasize there are errors that still can be made even with a computer system," DeChristoforo says.

Summary points

- Guidelines regarding medication errors with antineoplastic agents are being revised.
- Sometimes new technology can introduce errors.
- New drug development has shifted more focus to oral agents.

The guidelines still need to be peer-reviewed before they are approved.

Here is a preview look at what the proposed guideline changes suggest:

• **CPOE:** Increasing numbers of hospitals are using CPOE, which is expected to improve medication safety.

But sometimes the new technology itself can introduce new errors, DeChristoforo says.

"For example, you can make an order entry template for a prescriber who orders a particular regimen of chemotherapy," he explains. "But if you were to make a mistake designing the template then you'd perpetuate the mistake until someone caught it."

This is an example where technology potentially could make them worse by magnifying one mistake at one time to multiple mistakes over time.

"Let's say a drug is supposed to be 3.5 mg/kg per dose, but when the template indicates 3.2 mg/kg you introduce an error," DeChristoforo says.

The revised guidelines will recommend that if a hospital pharmacist makes a template, then he or she should make sure it's double-checked by various people to ensure it's correct, he says.

When health systems set up CPOE, they should make certain these are designed with patient safety safeguards in place.

"Using the CPOE system should prevent someone from ordering the wrong route of administration or prevent the potential for a deadly mistake," DeChristoforo says.

"With CPOE the doctor has to choose the route of administration," he explains. "So if a drug could kill a patient if it's given intrathecally, then the system should be set up so the doctor can't even select the wrong route of administration."

These electronic systems can be engineered to provide safeguards that do not allow prescribers to continue with an order until it's been corrected, he adds.

"We're emphasizing that having prescribers enter information directly into a CPOE decreases errors, but the system is not foolproof," DeChristoforo says.

• **Conversions:** "Many times chemotherapy is given by body surface area, and you need height and weight," DeChristoforo says.

"So there are times when a patient is weighed in kilograms," he explains. "Then someone enters pounds in the computer system instead of kilograms."

This weight entry error may lead to a dosing

error if not detected.

One solution is for a health system to decide to use one weight and measurement system and then stick with it, avoiding the need to use conversions, DeChristoforo says.

• **Oral agents:** "There are more oral agents that have come to the market since the first guidelines were written," DeChristoforo says. "Plus, for whatever reason, we didn't emphasize oral agents enough in the original guidelines."

New drug development has shifted more focus to oral agents with 25% of new cancer drugs in development being planned as oral chemotherapy agents, he adds.

"There's a sense among providers that since these drugs are oral, they're not as dangerous as IV medications," he adds. "But if you don't take them properly, they're still dangerous."

For example, the doses of oral medications should be independently double-checked, DeChristoforo advises.

"It's probably a good recommendation not to allow refills on prescriptions for antineoplastic drugs," he says. "The pharmacist should have access to enough information to check the dose, height, weight, body surface area, and stop/start date."

Prescribers need to teach patients not to crush or chew these products unless they're specifically told to do so, he adds.

Patient education is crucial because missed doses can have a bigger impact with these types of medications than with most drugs prescribed to patients, he adds.

"For patient education, you should provide both written and verbal education and have patients repeat key points," DeChristoforo says. ■

Study finds pharmacist involvement improves quality

But cost savings are elusive

When hospital pharmacists push for increased pharmacist involvement in clinical care, the goal often is to improve the quality of care and cut rehospitalizations and related costs.

One new study has added to the body of evidence that clinical pharmacists play an important role in improving the quality of patient care, but its findings stop there: The research found no evidence of improved costs or readmission rates.[1]

Summary points

- Clinical pharmacists help improve quality of patient care.
- Study finds no evidence of reduced costs or readmission rates.
- Pharmacist involvement in medication reconciliation is expensive.

"The literature cites as many as 60% of problems that occur post-discharge could be medication-related, and 20%-30% of discharged patients have problems 3-5 weeks post-discharge," says **Paul C. Walker**, PharmD, FASHP, clinical associate professor in the department of clinical, social, and administrative sciences at the University of Michigan College of Pharmacy and the assistant director of clinical services in the University of Michigan Health-System in Ann Arbor, MI.

The new study did find that having a pharmacist involved in medication reconciliation at discharge improves the quality of patient discharge by identifying and resolving medication discrepancies.[1]

"Since discharge plays such a big role in patient's outcomes, we thought if we could identify problems at the point of discharge and resolve them then patients could go home, and we'd prevent readmission," Walker explains.

To Walker's and co-investigators' surprise, this did not occur.

The study found that medication discrepancies at discharge were identified in 33.5% of intervention patients and 59.6% of control patients. All discrepancies were resolved in the intervention group prior to discharge, but study results showed no significant difference in readmission rates between the intervention group and control group at 14 days and 30 days. Also, there was no difference in emergency department visits.[1]

"I think one of the reasons we didn't see an impact on those economic outcomes is because our patients are pretty sick, and there are likely to be other variables that impact hospital readmission that we could not control for in our study," Walker says.

The project was developed from a grant the University of Michigan received for a demonstration project from the Centers for Medicare and Medicaid Services (CMS).

"It was to look at how health care for Medicare recipients could be improved across transitions in care," Walker says. "We got involved to find out

what the pharmacy could do to help with the process."

The hospital already had plans to improve on its discharge process before the CMS demonstration project came about, notes **Christopher Kim**, MD, MBA, FHM, assistant professor of internal medicine, pediatrics, and assistant medical director for the faculty group practice, and assistant chief of staff for the office of clinical affairs at the University of Michigan Health System in Ann Arbor, MI.

"What was serendipitously happening is the pharmacy department had ready-made plans to geographically place clinical pharmacists closer to the unit," Kim explains. "So now clinical pharmacists are closer to the units where patient care is provided, and they're available to not only provide answers to questions from the nurse, but also available to go in and speak directly to the floor staff and patients."

After a brainstorm session, hospital pharmacists decided to have a pharmacist involved with medication reconciliation at discharge, he adds.

"We thought by having a hospital pharmacist provide medication reconciliation and give patients information about the medications they will need at home, plus do a follow-up by phone after discharge, they might reduce the 30-day readmission rate or reduce the use of emergency services," Walker explains.

"The whole issue of transitional care is a hot topic right now," he adds. "With Medicare across the country, we're seeing rates of 20%-30%, so that was the emphasis behind our work."

Having a pharmacist involved with medication reconciliation and follow-up is expensive.

"The average salary of a pharmacist is $90,000-$100,000 in our area, plus benefits," Walker says. "So we're talking about $135,000 a year to have the pharmacist involved in the process."

The study could not demonstrate a cost offset because the pharmacist's involvement was not shown to reduce readmission rates or ED visits, he adds.

"We funded this project out of existing hospital dollars, so support was not continued when the study was over," Walker says.

On the other hand, the pharmacist's involvement was well-received by patients, he notes.

"Patients were very satisfied and appreciated pharmacist interaction," Walker says. "We did a customer service survey to get feedback, and we found they were very appreciative of the service."

The intervention had a pharmacist identify high-risk patients by looking at the number of prescribed medications and the number of changes made following admission.

"We looked at patients who had the handful of diagnoses that the CMS project was looking at, including diabetes and congestive heart failure," Walker says. "It turned out that based on our risk factors we had a large number of patients who were eligible for enrollment in the study."

There were three targeted medical services, and the pharmacist would work with one or two services for a month and then move to other, he explains.

The pharmacist did this in alternating fashion, so patients who were not receiving the pharmacist's services that month were receiving usual or customary care, Walker says.

The pharmacist also worked daily with the attending physician and the entire medical team, including the discharge planner.

"She'd review the medical record and reconcile medications with the patient, identifying any potential discrepancies," Walker says. "She made sure prescriptions written at discharge were the right ones, and she'd provide patient education to the patient and caregiver, going over the medication list."

The pharmacist used the teach-back method to see if patients understood the information.

If the patient was prescribed a new medication, the pharmacist made certain the patient understood how to use it, and, in some cases, facilitated getting the prescriptions filled.

Then after the patient returned home, the pharmacist would call within 72 hours to see if there were any problems related to medication or any concerns about the discharge, Walker says.

"She'd work to resolve any issues," he adds.

COMING IN FUTURE MONTHS

- Economic downturn is having negative impact on medication safety
- Case study: state-of-art inpatient DTM service for direct thrombin inhibitors
- System successfully expands pharmacist role in medication administration
- Improve pharmacy mentoring process following these tips
- Follow these guidelines in developing evidence-based medicine process

"If the problem was not medication-related, or if it was an issue the pharmacist couldn't resolve, then she'd triage the patient to the prescribing physician or nursing staff."

The idea was to identify any problems and refer the patient to the appropriate medical provider to receive assistance.

In one unpublished finding, investigators found in conversations with patients post-discharge that some still had medication-related issues despite the pharmacist intervention, he says.

"If we gave them instructions they might not recall them," Walker says. "That raises the question about when is the best time to teach patients about therapy; is it at discharge, or earlier in their hospitalization, or after they go home?"

One problem might be that hospitals barrage patients with a lot of information at discharge, and they can't assimilate it all, he suggests.

"That would make a very interesting investigation," Walker adds.

The hospital now has nurses provide medication use instructions at discharge, but Walker and colleagues are working on a model that would also engage pharmacists in the education.

"It's being done in an interdisciplinary fashion, and the work is very new," he says. "We're looking at other ways to improve the transition of care to improve readmission rates, and one is to have each health care provider give his or her own expertise to the discharge process."

Although the hospital has stopped funding a pharmacist position for medication reconciliation, other process improvements have been implemented, including an electronic process for medication reconciliation at discharge, Walker says.

"When physicians are discharging patients who are in our system, they can look at the electronic medication list, both for inpatient as well as for the outpatient world," Walker says. "They see both lists and can update the lists and generate any necessary prescriptions."

Investigators are evaluating that system to see how well it is working, he adds.

"I have another project going with a colleague to look at whether it makes a difference to have a pharmacist make phone calls after the patient goes home to identify medication-related issues," Walker says.

Investigators are continuing to look for ways pharmacists can contribute to an improved hospital discharge process.

There might be some more cost-effective models, involving hospital pharmacy personnel, he notes.

"In some cases pharmacy technicians can do this work," he says. "This would reduce the volume of work pharmacists have to do, and it could improve the transition of care and hopefully reduce our readmission rate." ■

Reference

1. Walker PC, Bernstein SJ, Jones JNT, et al. Impact of a pharmacist-facilitated hospital discharge program. *Arch Intern Med* 2009;169:2003-2010.