

# PHARMACY PRACTICE NEWS

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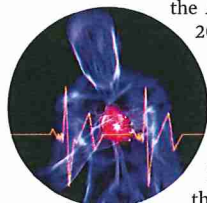
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## Real-World Clinical Use Of Warfarin Far From Ideal

*Half of all INR test results found to be out of therapeutic range*

ORLANDO, FLA.—Warfarin is not optimally used as a stroke prevention therapy in patients with atrial fibrillation (AF), according to two studies reported at the American College of Cardiology 2009 annual meeting.



Previous studies have suggested that warfarin can reduce the risk for ischemic stroke by more than two-thirds compared with no therapy, and by half compared with antiplatelet therapy. However, according to the new studies, warfarin's impact

may actually be far less dramatic because most patients who are eligible for warfarin do not receive it, and those who do receive it frequently have international normalized ratios (INRs) that are outside the therapeutic range.

see WARFARIN, page 27

## Pharmacogenomics: Gearing Up for Primetime

*New educational initiative supported by the CDC, pharmacy societies and colleges*

In April, the field of pharmacogenomics may have come of age when 157 attendees at the American Pharmacists Association (APhA) annual meeting received two continuing education (CE) units for a session led by staffers of the "Pharmacogenomics Education Program: Bridging the Gap between Science and Practice" (PharmGenEd).

Created by Grace Kuo, PharmD, MPH, and her team at the Skaggs School of Pharmacy and Pharmaceutical Sciences at the University of California, San Diego (UCSD), the program is offered in collaboration with the APhA, the American Society of Health-System Pharmacists (ASHP) and the American Association of Colleges of Pharmacy (AACP).

To keep the momentum going, this summer, two Web-based CE PharmGenEd modules will debut, followed by an online shared pharmacy college curriculum.

see PharmGenEd, page 20

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**Safe Handling Of Hazardous Drugs: Reviewing Standards for Worker Protection**



Insert after page 6

## Chemotherapy-Related Cardiac Toxicity Requires More Vigilance



ORLANDO, FLA.—Modern chemotherapy often can cure cancer, but at a significant cost to the heart, according to a growing body of data showing life-long cardiomyopathy in many cancer survivors. Chemotherapy-related cardiotoxicity is gaining recognition, but its prevention and management are still inadequate, according to presentations at the American College of Cardiology 2009 annual meeting.

Anthracyclines have long been recognized as having cardiotoxic effects, but more recently, the tyrosine kinase inhibitors (TKIs) have been shown to have such effects. Toxicities can include heart failure, myocardial infarction, cardiac dysfunction, hypertension, arrhythmias and thromboembolic events.

With this increased recognition comes the need to "balance tumor efficacy against cardiac safety with these agents," said presenter Ming Hui Chen, MD, assistant professor of medicine at Harvard Medical School, in Boston.

Dr. Chen noted, "cardiotoxicity is not a class effect of all inhibitors of tyrosine kinase."

see CARDIAC TOXICITY, page 15

## FDA Amends Opioid Ban

*ISMP: earlier rule would have 'unintended safety consequences'*

Manufacturing and distribution of high-concentrate morphine sulfate solutions will be allowed under a temporary amendment to the FDA's decision in March to halt the sale of unapproved opioid pain products. The "enforcement discretion" on behalf of the agency came in response to concern from patients, physicians and health care organiza-

tions—particularly those in the palliative care community—over a potential shortage of 20 mg/mL morphine sulfate oral solution if the ban was put into effect.

"While the FDA remains committed to ultimately ensuring that all prescription drugs on the market are FDA-approved, we have to balance that goal with flexibility and

see OPIOID BAN, page 35

### The Book Page



#### 2009 Intravenous Medications

Betty L. Gahart; Adrienne R. Nazareno

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### New Product



Bioniche Pharma Launches Enlon® and Enlon-Plus®

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## High-Tech Enhancements on Tap in Outpatient Pharmacies

Outpatient hospital pharmacies are using robotics, automated “will-call” prescription pickup systems and other technologies to streamline drug dispensing. In the process, patients, staffers and hospital finances are all reaping the benefits.

Consider these examples:

- At the University of Kentucky Health-Care (UKHC), in Lexington, a ScriptPro 200 dispensing robot fills approximately half of the system's daily volume of 1,000 prescriptions, at the rate of 46 scripts per hour. According to hospital officials, the installation is saving the equivalent of half of a pharmacist's time, which has been reallocated to direct patient care services, plus the expense of three full-time-equivalent pharmacy technicians.

- At San Joaquin General Hospital, in Stockton, Calif., which fills more than 600 prescriptions per day, a will-call system ensures that patients picking up prescriptions receive all of the medications that were ordered quickly—as much as one minute per transaction faster than before implementation, thereby shortening everyone's wait times. Moreover, bar-code scans and personal identifiers ensure that patients receive the right medications in a secure manner, even when multiple customers share the same name.

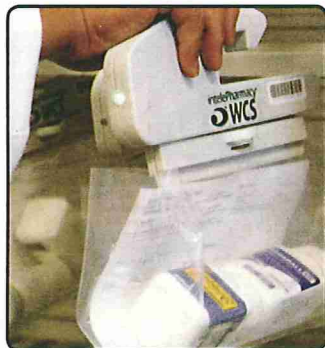
The will-call system also eases the tedious task of returning nonpurchased prescriptions (about 100 scripts per week) back to inventory. The formerly manual process that once took four hours every two weeks now takes 30 to 45 minutes every Friday. As important, the system makes the pharmacy inventory “just-in-time” with less idle dollars.

- Similar gains in inventory handling are on display at the University of Wisconsin Hospitals and Clinics (UWHC), in Madison. The hospital recently equipped its 15 outpatient pharmacies with the Emporos point-of-sale (POS) system, and used its analytics to identify obsolete pharmaceutical inventory and slow-selling over-the-counter (OTC) products.

### A Long Time Coming

Bruce Kneeland, a pharmacy industry consultant in Royersford, Pa., said that efforts to streamline outpatient pharmacy operations could not have come at a better time. “Hospital management often overlooks the need to provide patients with convenience and customer service programs on par with community and clinical pharmacies,” Mr. Kneeland said. “Hospitals that address these challenges are putting themselves in a position to compete with any pharmacy in their region.”

John A. Armitstead, MS, RPh, FASHP, director of pharmacy services and assistant dean for medical center pharmacy services at UKHC, said there also are clinical factors that are driving outpatient pharmacy innovations. “I've seen this train coming for 15 years,” Mr. Armitstead said. “Oncology therapies have moved from inpatient-based to almost exclusively outpatient-based. It's a total inversion.”



PickPoint Corp.'s intelePharmacy Will Call System helps reduce put-away and retrieval times for dispensed prescription medications.

But the phenomenon is not limited to oncology, he stressed. “We used to have HIV patients filling our infectious diseases unit; now we have only one or two HIV patients with aging problems, since most HIV patients can be treated effectively as outpatients. We also have seen an explosion of biotechnology drugs to suppress rheumatoid arthritis, Crohn's disease and long-term dermatologic diseases.”

### Robotics Smooth Workflow At UKHC

UKHC derives more than half of its revenue from more than 1 million outpatient visits per year for clinic and infusion services, laboratory work and outpatient pharmacy. The latter drives about \$80 million in annual gross prescription revenues—more than the \$70 million in inpatient pharmaceuticals dispensed to 25,000 to 30,000 yearly admissions, said Mr. Armitstead, who oversees both sides.

One large clinic outpatient pharmacy fills 1,000 scripts daily for 340B-eligible patients, and a student health pharmacy on campus fills 120 prescriptions daily.

Pleased by the productivity benefits of the ScriptPro 200 dispensing robot, he said, “we have spent five years with the unit. We will renew.”

Pharmacists still take every order in person and counsel while doing online adjudication at the front end. They also confirm that the robot filled properly at the back end of the process. But techni-

cians are trained to replenish and monitor the system.

“Drug costs are 85% of our budget, 10% people, the rest automation,” Mr. Armitstead said. “We look to control the costs of people and automation to efficiently deliver drugs. We reduce waste and repetitive actions. The ScriptPro unit leads to more accurate counts on average, in less time with 100% label accuracy. This efficiency enables us to lower our costs of service.”

*‘Hospital management often overlooks the need to provide patients with convenience and customer service programs on par with community and clinical pharmacies.’*

—Bruce Kneeland

Mr. Armitstead said he is particularly proud of his outpatient pharmacy's coordination with the inpatient side when transplant patients are discharged, and he is able to “hand over refrigerated medications worth thousands of dollars on a just-in-time basis, and handle the adjudication and co-pays.”

The UKHC outpatient pharmacy likely will be able to accept e-scripts from prescribers within 12 to 18 months, noted Mr. Armitstead. “The inpatient side has had CPOE [computerized prescriber order entry] for at least five years. This expansion is part of a larger initiative to have electronic medical records.”

### Will-Call Refines Rx Pickups At San Joaquin General Hospital

San Joaquin, Calif., is a farming community with many indigent, county-funded patients with tuberculosis and diabetes who face great health risks if they fall off of their medication regimens. Aiming to minimize a vulnerability in its processing of 600 to 700 scripts per day (five days per week), the outpatient pharmacy at San Joaquin General Hospital became the beta site for PickPoint Corp.'s intelePharmacy Will-Call System last June to make sure the right patients receive the right medications at the register in a secure and timely manner.

The complication, said Krissy Hirai, PharmD, interim outpatient pharmacy supervisor, is the large number of patients with identical names, and the international nature of the patient base, mostly Latinos and southeast Asians who speak many different dialects, but not English. “A facility our size, we see so many different patients, we have to

be able to get names and verify them quickly,” she said.

PickPoint technology uses biometric finger scans and birth dates as identifiers. Once identification is confirmed, the light-pick hanging bag system lights up each of the patient's prescriptions for retrieval, regardless of when they were ordered or where they are behind the bench. “No alphabetized bins are needed, and patients wait less time,” noted Dr. Hirai, who cited several other benefits:

- When prescriptions are not picked up, the process of returning them back to inventory is streamlined and done more often. “Since we order drugs from our wholesaler on a just-in-time basis, this reduces our idle inventory,” Dr. Hirai said. “The system issues a list of seven-day-old scripts, but we lack the staff to call these patients. Maybe down the road, we'll look at automatic calls, although many of our patients don't have phones.”

- Picking the right bag with the right contents is assured. Otherwise, the POS scan will indicate “incorrect bag” or “bar code doesn't match.”

- Blinking lights on the bags make patients confident they're getting their right medications.

“Drop-off and pick-up are the two biggest bottlenecks in any pharmacy. It's universal. It's what patients see. We address it,” said PickPoint's vice president of sales, David Valencia, PharmD, who in a previous position was a senior pharmacy executive for the Longs Drug and Safeway chains. Dr. Valencia estimates his system can reasonably save one minute of handling time per prescription; this lessens stress on staff, and helps them interact with patients professionally and confidently.

### POS Integrates the Full Store At UWHC

Until UWHC adopted a unifying POS system this past October, its 15 outpatient pharmacies had 15 stand-alone cash registers at each site. Now, staff can cross-train on the Emporos technology and fill rotating schedules as needed at each site. The integration of Emporos with UWHC's McKesson EnterpriseRx pharmacy management system enables the pharmacy to schedule follow-up calls to patients to persist in their care programs, and helps expedite the return of leftover goods to inventory.

The system's analytics and full-store capabilities appeal to Hannel Tibagwa-Ambord, PharmD, pharmacy manager of ambulatory services at UWHC. For example, it “identifies slow OTC movers and obsolete pharmaceutical inventory. This helps if I have to

see ENHANCEMENTS, page 49