PDA Dose Calculator Slashes NICU Drug Errors

BY ERIK GOLDMAN
Contributing Writer

OLD GREENWICH, CONN. — A PDA-based drug dose calculator system brought about a marked reduction in medication errors at a university's neonatal intensive care unit, Dr. M. Kabir Abubakar reported a meeting of the Eastern Society for Pediatric Research.

The error reduction, from 1.77 per 100 orders to 0.66 per 100 orders, occurred within a 12-month period after Georgetown University Hospital's NICU mandated that all staff use the Neofax drug database system. The improved performance was all the more remarkable because it occurred during a period of rapid growth in the hospital's neonatal and perinatal departments, with the number of NICU drug orders almost tripling from the previous year.

In 12 months, the Georgetown University Hospital team was able to reduce its total medication error rate from 1.77 to 0.66 per 100 orders.

According to Dr. Abubakar, of Georgetown's division of neonatology, medication errors are a significant contributor to neonatal morbidity in the NICU setting. Neonates are highly vulnerable, and a misplaced decimal point in a dose calculation can have huge clinical implications.

As part of its ongoing quality improvement efforts, MedStar Health—the hospital system that owns Georgetown—put up the funds to provide PDA-based Neofax dose calculators to all NICU physicians, residents, fellows, nurse-practitioners, and dispensing pharmacists. Following a training period, staff was required to use the PDA for all NICU drug orders.

Pharmacists and bedside nurses cross-checked all physician dose calculations using the same system.

"It took about 3 months to get everyone trained and compliant with the system," said Dr. Abubakar in an interview. "There was some resistance, of course, but the bigger problem was that initially a lot of people were forgetting or losing their PDAs. Eventually, we had to install them in stationary places by every four or five NICU beds."

The ultimate payoff, in terms of reduced errors, was tremendous. In the 12 months following adoption of the system, the Georgetown team was able to reduce its total medication error rate from 1.77 to 0.66 per 100 orders. Prescription errors dropped from 1 per 100 orders to 0.3 per 100.

There was a 62% reduction in the number of 10-fold dosing errors, that is, errors of decimal point placement, in the year following implementation of the system. Dispensing and administration errors were also reduced, although the baseline numbers for these types of errors were fairly low.

The total number of drug orders at the NICU increased from 13,557 in the year prior to adoption of the PDA system to 31,680.

"The hospital system had a growing number of perinatologists, so our unit was seeing a big increase in the number of patients, and consequently, an increase in the number of drugs ordered," Dr. Abubakar said at the meeting, cosponsored by the Children's Hospital of Philadelphia. "We would have expected this to increase the error rate, but we saw just the opposite."

The Palm-based system itself deserves only part of the credit for the improvement, he noted.

Implementation of a system like this naturally prompts clinicians and other staff members to pay closer attention to the accuracy of their prescribing and dose calculations. "Just knowing they're being watched and cross-checked has an effect." That said, there's no question that digitized dose calculators built on a reliable drug database can greatly reduce the margin of error. ■

NEXT ISSUE

Health IT

We'll bring you a status report on efforts to make health information technology more affordable and interoperable for physicians across the country.

BRIEF SUMMARY OF PRESCRIBING INFORMATION

Mimyx™ cream

For Topical Dermatological Use Only **Rx only**

Indication For Use
MimyX Cream is indicated to manage and relieve the burning and itching experienced with various types of dermatoses, including atopic dermatitis, allergic contact dermatitis and radiation dermatitis. MimyX Cream helps to relieve dry, waxy skin by maintaining a moist wound & skin environment, which is beneficial to the healing process.

Contraindications
MimyX Cream is contraindicated in persons with a known hypersensitivity to any of the components of the formulation.

Warnings
In radiation therapy, MimyX Cream may be applied as indicated by the treating Radiation Oncologist. Do not apply 4 hours prior to a radiation session.

Precautions and Observations
- MimyX Cream is for external use only.
- MimyX Cream does not contain a sunscreen and should not be used prior to extended exposure to the sun.
- If clinical signs of infection are present, appropriate treatment should be initiated; use of MimyX Cream may be continued during the anti-infective therapy.
- If the condition does not improve within 10 – 14 days, consult a physician.
- Keep this and other similar products out of the reach of children.
- MimyX Cream may dissolve fuchsin when this dye is used to define the margins of the radiation fields to be treated.

HOW SUPPLIED
MimyX™ Cream is available in a 70 gram tube, NDC 0145-4200-01.

Store at 15°C to 30°C (59°F to 86°F). Do not freeze.

Stiefel Laboratories, Inc.
Coral Gables, FL 33134

826801-0905

Rx only - Prescription Medical Device: Federal Law restricts this device to sale by or on the order of a physician.

REFERENCES: 1. Data on file. August C. Stiefel Research Institute, Inc. **2.** Eberlein-Koenig B, Eicke C, Reinhardt H-W, Ring J. Adjuvant treatment of subjects with atopic dermatitis: assessment of Physiogel A.I. (MimyX Cream) (ATOPA). Presented at: 64th Annual Meeting of the American Academy of Dermatology; March 2006; San Francisco, CA. Poster 821. **3.** Kemeny L. A comparison of S236 (MimyX Cream) to hydrocortisone 1% cream in the treatment of mild to moderate atopic dermatitis. Presented at: 63rd Annual Meeting of the American Academy of Dermatology; February 2005; New Orleans, LA. Poster 708. **4.** Jorizzo JL. Lamellar preparations as adjunctive therapy in the treatment of atopic dermatitis. Presented at: 63rd Annual Meeting of the American Academy of Dermatology; February 2005;New Orleans, LA. Poster 721. **5.** Zerweck C, Fraser JM, Grove GL. Efficacy of S236 Cream (MimyX Cream), a medical device cream, in promoting barrier repair of razor-induced skin trauma. Presented at: 64th Annual Meeting of the American Academy of Dermatology; March 2006; San Francisco, CA. Poster 805. **6.** Llorca MA, Dorado Bris JM, Sáenz de Santamaría MC, Aneri Más V, Garay Arconada, Pérez Muinelo A. Evaluation of the activity of a moisturizing and restoring-action preparation, with lamellar structure, as adjuvant in the treatment of atopic dermatitis and xerotic skin. *Rev Intern Dermatol Dermocosm.* 2003;6:425-430. **7.** MimyX Cream [package insert]. Coral Gables, FL; Stiefel Laboratories, Inc.; 2005.

MimyX is a registered trademark and Research in Dermatology is a trademark of Stiefel Laboratories, Inc.

STIEFEL®

Certified Electronic Health Record Products Due Soon

BY MARY ELLEN SCHNEIDER
Senior Writer

PHILADELPHIA — Physicians purchasing an electronic health record will be able to consult a list of certified products as early as this summer, according to Dr. Mark Leavitt, chair of the Certification Commission for Healthcare Information Technology.

The certification commission planned to begin accepting applications from electronic health record (EHR) vendors in late April or early May and to publish a list of certified products and their developers in late June or early July.

The list, featuring the first batch of products with the certification commission's seal of approval, will be published on its Web site (www.cchit.org).

The process of certification is voluntary and its success is dependent on acceptance in the marketplace, Dr. Leavitt said at the annual meeting of the American College of Physicians. "We're not setting the bar above everyone's heads so that no products meet it," he said. "But it is not trivial to have a product that meets the criteria."

The certification commission was formed in 2004 by the American Health Information Management Association, the Healthcare Information and Management Systems Society, and the National Alliance for Health Information Technology. In September 2005, the group received a 3-year contract from the Department of Health and Human Services to work on certification criteria for EHRs.

The certification commission is focusing first on certifying products for the ambulatory setting. In phase II, the certification commission will work on evaluating EHR products for the inpatient setting, and in phase III it will evaluate the infrastructure or network components for EHR interoperability.

Vendors will apply for certification and pay a testing fee. To keep costs down, the testing will be done virtually through an Internet browser. A three-person panel, including at least one practicing physician, will judge the demonstration of the product during a process that could take several hours to a day, Dr. Leavitt said.

It's unclear how many products will be certified in the first round, Dr. Leavitt added.

EHR products will be evaluated based on more than 250 functional requirements. But the commission is not in the business of designing EHRs, said Dr. Sarah T. Corley, cochair of the certification commission's functionality workgroup, and there will be some variability in the market.

The standards developed by the commission will set a baseline for what every physician needs in an EHR, but some subspecialists may need to work with vendors to add more functionality, she said.

For example, oncologists may want to customize EHR products to add functionality specific to the care they provide, Dr. Leavitt said. However, the work of the certification commission should be valuable to physicians in all specialties because it will help to narrow the field.

"You still need to do your homework," Dr. Leavitt said, but certification will allow physicians to home in on the advanced level of functionality they need. ■