

USP Asks for Help in Heading Off Drug Errors

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The soaring numbers of commonly used drugs with soundalike and look-alike names have prompted the U.S. Pharmacopeia to ask physicians and pharmacists to include an "indication for use" on prescriptions.

This and other recommendations are contained in U.S. Pharmacopeia's 8th annual MEDMARX report, which is based on a review of more than 26,000 records submitted to the MEDMARX database from 2003 to 2006.

The records implicate nearly 1,500 drugs in medication errors due to brand or generic names that could be confused. From these data, U.S. Pharmacopeia (USP) compiled a list of more than 3,000 drug pairs that look or sound alike, a figure that is nearly double the number of pairs identified in USP's 2004 report, said Diane Cousins, R.Ph. "We were surprised to see that much of an increase in such a short time, and the concern is that this increase in products in the marketplace further raises the opportunity for error," said Ms. Cousins, USP's vice president of health care quality and information.

USP also operates, in conjunction with the Institute for Safe Medication Practices, the Medication Errors Reporting Program (MER), which allows providers to confidentially report potential and actual medication errors directly to USP.

USP reviewed both MEDMARX and MER to summarize the variables associated with more than 26,000 look-alike and/or soundalike (LASA) errors, of which 1.4% (384) resulted in harm or death. More than 670 health care facilities contributed 26,000 records, according to the 400-page report.

"We looked at lists of the top 200 drugs

prescribed and used in hospitals, and virtually every time, all of the top 10 appeared within the USP similar names list," Ms. Cousins said in an interview.

An important finding of this year's report is the role of pharmacy staff in LASA-related errors, she said. "Although pharmacy personnel, who are generally technicians, made the majority of errors, pharmacists as a group identified, prevented, and reported more than any other staff."

The report also identifies an emerging trend of look-alike drug names in computerized direct order entry systems as a source of confusion. "This trend will likely continue as these systems become a standard of practice," she said, adding that the LASA-related error problem is further compounded by the indiscriminate use of suffixes, as well as look-alike packaging and labeling.

Over the 3-year period, the drug most commonly confused with others was Cefazolin, a first-generation cephalosporin antibiotic. "We found it to be confused with 15 other drugs, primarily antimicrobials, which might be explained by the fact that this is the most frequently used class of medications," said Ms. Cousins.

Among other major paired LASAs were cardiovascular drugs, such as lisinopril and enalapril, and central nervous system agents, like trazodone and chlorpromazine.

Drug mix-ups led to seven reported fatalities, including two deaths attributed to confusion over the Alzheimer's drug Reminyl (galantamine) and the antidiabetic drug Amaryl (glimperide).

In 2005, recognizing the high risk of con-

fusion and subsequent fatal hypoglycemia, Ortho-McNeil Neurologics Inc. announced the name Reminyl had been changed to Razadyne to avoid confusion with Amaryl.

In another case, an autistic pediatric patient was given the wrong product when disodium EDTA (a hypercalcemia treatment) was administered instead of the chelation therapy calcium disodium EDTA, which is approved by the Food and Drug Administration for the treatment of lead poisoning and was prescribed in an attempt to help treat the patient's autism.

In another case, an emergency department physician was preparing to intubate a patient and calculated the right dose for rocuronium (Zemuron), a preintubation agent. The physician gave orders for the nurse to obtain the medication and indicated the volume to administer to the patient. The nurse obtained and administered the neuromuscular blocking agent vecuronium (Norcuron) instead. The patient received a large amount of the wrong agent, which led to a fatal heart arrhythmia.

The remaining three reported deaths involved mix-ups between the anticonvulsant primidone and prednisone; the antiepileptic drug phenytoin sodium and the barbiturate phenobarbital; and Norcuron and the heart failure treatment Natreacor (nesiritide recombinant).

Errors occur with over-the-counter medications, too. Ms. Cousins described the aural confusion when an order for Ferro-Sequel 500 mg—an iron replacement—was transcribed as Serrosequel 500 mg and the order was misread as Seroquel 500 mg—an antipsychotic.

The rate of mix-ups involving brand name versus generic drugs was about evenly split, 57% and 43%, respectively, Ms. Cousins said, adding that while most errors were made in pharmacies, many, such as the primidone-prednisone incident, are due to confusion over the prescribing physician's handwriting, which lead the pharmacist to issue the wrong drug.

"Errors also are due to physicians using short codes for medications, such as 'clon,' for clonazepam or clonapine," she said, adding that electronically written prescriptions using a computer or label machine would eliminate many errors. "Anything that takes handwriting out of the equation is a help."

It would also be helpful if the FDA were given more authority to force name changes during the drug review process, as has been suggested by the Institute of Medicine. It's much more difficult to correct a name confusion issue once the products are on the market.

The recommendation that physicians include indications for use in their prescriptions is not an attempt by USP to impose on privacy, Ms. Cousins said. "All that is needed are simple inclusions, such as 'for sinus,' 'for heart,' or 'for cough,'" she said.

USP also recommends that "tall man lettering" be implemented in pharmacy software, labeling, and order writing to say, for example, "acetaZOLamide" (glaucoma) and "acetoHEXamide" (diabetes).

Where risk exists, take action to reduce the chance for error. To build awareness, USP recommends disseminating information about products that have been confused at your facility, and prohibiting verbal orders for soundalikes.

"Physicians' offices should always require a read-back from pharmacists, making sure that they both say and spell the drug name," Ms. Cousins said.



Some errors result from physicians' use of the same abbreviation for two drugs: clon for clonazepam and clonapine.

MS. COUSINS

U.S. Spent \$2 Trillion on Health Care in 2006, Drug Tab Up 8.5%

BY ALICIA AULT
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WASHINGTON — The nation spent \$2 trillion, or \$7,000 per person, on health care in 2006. While that was only a small increase from the previous year, America's prescription drug tab increased by 8.5%.

Health spending as a share of the nation's gross domestic product hit 16% in 2006.

Total spending on physician and clinical services grew 5.9% to \$448 billion, which was the slowest rate of growth since 1999. Physician pay crawled almost to a halt, largely because of the freeze in Medicare's reimbursement rates in 2006. Private insurers seemed to have followed suit, said Cathy Cowan, an economist at the Centers for Medicare and Medicaid Services. Cowan, a coauthor of an annual analysis of the nation's health spending, spoke at a brief-

ing on the report, which was published in the January/February issue of Health Affairs.

Spending on nursing home and home health declined from the previous year's growth. Nursing home prices dropped; spending still grew 3.5% in 2006, less than the 5% increase in 2005. Home health services—the fastest growing component of personal health spending—grew almost 10% in 2006, down from 12% in 2005.

Medicare had the fastest rate of growth since 1981, according to the report. Spending increased 19% in 2006 to \$401 billion, driven largely by the prescription drug benefit and administration for that benefit and for Medicare Advantage.

Medicaid spending dropped for the first time since the program began in 1965. The 0.9% decrease was largely due to Medicaid enrollees being shifted into Medicare for prescription drugs.

Overall drug spending grew 8.5% in 2006—a far cry from the double-digit increases seen in the late 1990s, but still up from the 5.8% rise in 2005. Half of the increase was due to greater utilization, not surprising given that about 23 million Medicare beneficiaries took advantage of the new benefit. Prescription prices increased by only a little over 3%, according to an annual analysis by actuaries at the Centers for Medicare and Medicaid Services.

The change in the drug rebate picture also contributed to rising drug costs. Under Medicaid, states received an average 30% rebate from drugmakers. Medicare got only about 5% from manufacturers for the millions of beneficiaries who shifted out of Medicaid.

Medicare spent \$41 billion on Part D in 2006, with \$35 billion for drug purchases and \$6 billion for administration and "net cost of insurance"—that is, the cost of

subsidizing premiums for low-income beneficiaries and costs for transferring beneficiaries into private plans. Medicare paid for 18% of all retail drugs, compared with only 2% in 2005. Medicare took on costs that were previously covered by private insurers, Medicaid, and the uninsured.

On average, each Part D enrollee received \$1,700 in benefits, according to CMS.

The largest increase in drug utilization came from beneficiaries using the Part D benefit. But there was also increased drug use due to new indications for existing drugs, growth in several therapeutic classes, and rising use of specialty drugs like injectable biologics for rheumatoid arthritis and multiple sclerosis, and anemia drugs for oncology.

The rising availability of generic drugs, and programs designed to encourage their use, also drove an increase in pharmaceutical uti-

lization. A \$4 generic program offered by Wal-Mart contributed to that trend and also helped keep prices down, according to the CMS authors. Sixty-three percent of drugs dispensed in the United States in 2006 were generic, according to the report.

Overall, the analysis shows the largest category of health spending is still hospital care, consuming 31% of the nation's health dollars. Other spending, which includes dental, home health, durable medical equipment, over-the-counter medications, public health, research, and capital equipment, consumes 25%. Physician and clinical services follow at 21%, then prescription drugs at 10%, administration at 7%, and nursing home care at 6%.

The authors said the data did not allow them to determine whether the prescription drug benefit had increased or lowered overall health care spending.