



PRN Quarterly

Pharmacy Related News
Winter 2007

Newsletter of the Utah
Society of Health-System
Pharmacists

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The mission of USHP is to advance and support the practice of pharmacy in health-systems and serve as a collective voice on issues related to medication use and public health.

President's Message

Have you ever wondered what makes some ideas really take off, while other equally good ideas falter? Malcom Gladwell addresses this phenomenon in his book, *The Tipping Point*. The tipping point is that moment when an idea, trend, or social behavior tips and spreads like wildfire. This has been compared to an epidemic.

Ideas often take off not by spending more resources or throwing more people at them. It doesn't take a lot of people. It involves creative problem solving on ways to implement an idea with the minimum amount of effort, time and cost, with the most impact. It involves some persistence—if one way doesn't work, trying another to increase the "stickiness" of the message. One person can make a difference. To create a big change, we often have to start with many small changes.

Working as individuals, as health care organizations, and together as your state society, we have the opportunity to find the tipping point in identifying ways to improve the care of the patients we serve one small change at a time. You can make a difference in making this happen. USHP has the opportunity to support you and provide the right conditions to support change.

I believe USHP has many opportunities to advocate for pharmacists at the community and state level. We have an important message that we would like to catch on: Health-system pharmacists help patients use their medications safely to achieve maximum effectiveness. Health system pharmacists have a role our communities to promote public health. It is important for each of us to spread this message as the opportunities arise within our organizations and communities.

Thank you for the opportunity to serve as your President. Together with your Board, our committees, and our student chapter, I look forward to great New Year.

Linda Tyler, USHP President

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CONTINUING EDUCATION CALENDAR

**FEB. 10 USHP & COLLEGE OF
PHARMACY MID
WINTER UPDATE**

**MARCH 13 - APRIL 30
U OF U, VA &
INTERMOUNTAIN
RESIDENCY SEMINARS**

**MARCH 28 UPHA ANNUAL
MEETING**

**MAY 12 PRIMARY CARE
CONFERENCE -
COLLEGE OF
PHARMACY**

**SEPTEMBER 8 USHP ANNUAL
MEETING**

**FOR DETAILS CHECK OUT THESE
WEBSITES:**

WWW.USHP.ORG

The USHP Newsletter is published as a service to members of the Utah Society of Health-System Pharmacists. Address general correspondence and/or article submissions to:

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TECHNICIAN SPOTLIGHT WINTER 2007

Name: Sarena Kim Rasmussen

How long have you been a technician?

About 2 years

What did you do before you became a

technician? I was a Treatment Worker/Assistant Manager for a company called Community Treatment Alternatives. I gave support to four young autistic women in a group home setting. I worked with this company for about 6 years prior to Fourth Street Pharmacy.

Where do you currently work?

Wasatch Homeless Health Care Inc. Fourth Street Clinic & Pharmacy.

What are your current work responsibilities?

As the Pharmacy Coordinator I am in charge of scheduling staff for the pharmacy. I do all the ordering and stocking of pharmaceuticals for the pharmacy and clinic. I have a hand in almost all basic management tasks for the Fourth Street Pharmacy.

What is the most rewarding aspect of your current job?

Many individuals end up homeless due to medical expenses. This can be very draining financially. It has been very rewarding to see individuals in this situation go from homeless to stable housing and having a job with health care benefits, with the help we provide.

Any help you need at your worksite?

About 85% of the staff at Fourth Street Pharmacy are volunteers. We can always accept help from volunteer technicians and pharmacists. Aspiring pharmacy students are welcome as well. We could even use help from unlicensed personnel to help with various projects. We currently have our Annual Vial Drive underway. We are accepting donations of prescription vials; this saves our pharmacy thousands of dollars per year. Any help is very appreciated – please call the pharmacy at 801-364-0058 if you have vial donations or would like to volunteer your services.

UNIVERSITY OF SOUTHERN NEVADA SOUTH JORDAN, UT CAMPUS

Welcome to Utah! With that, the University of Southern Nevada opened its doors to 52 students at its branch campus on South River Front Parkway in South Jordan.

USN is a private, not for profit, university whose main campus is in Henderson, Nevada. It began as the Nevada College of Pharmacy in 2001 with a student body population of 32 and core faculty of Dr. Harry Rosenberg (University President), Dr. Renee Coffman and Dr. Charles Lacy. In 2004 the name was changed to the University of Southern Nevada to reflect its growth and planned additional programs.

In 2004, recognizing the demand for pharmacists in and around Nevada, USN decided to establish a branch campus in an area where it could effect change. It chose Utah as a site for the branch campus. Once approval was granted by the Board of Trustees, the University began planning and construction of a 120,000 square foot facility in South Jordan. The program is currently housed in a 6,500 square foot temporary facility with relocation to the permanent facility scheduled for January of 2007.

The University offers a unique curriculum structured around a block concept. It emphasizes a student-centered, active learning environment, where students participate in experiential education during the first year of their program. Rather than semesters or quarters, the curriculum is organized into blocks that allow a student to take one course at a time. Students are in class from 8 a.m. to 3 p.m. allowing them ample time to concentrate and focus on achieving desired outcomes. It also provides students opportunities to be active participants in the learning process by facilitating the incorporation of a variety of learning activities other than the traditional lecture format. Moreover, the early pharmacy practice experiences are designed to enhance and support the didactic curriculum by allowing students to actually see, feel and understand what was presented in the classroom in an actual pharmacy setting. The structure of the curriculum allows students to complete the program in 3 years as opposed to the traditional 4 years.

In coming to Utah, Dr. Renee Coffman, Dean of the College of Pharmacy at USN had this to say: “There is a definite shortage in Utah. The difference between Utah and Nevada was actually pretty striking. Since we’ve had the school in Nevada we’ve been able to impact the shortage there. Hopefully, we’ll be able to do the same for Utah.” Of the 52 students admitted into the first class, 32 are Utah residents.

To oversee the South Jordan campus operations, Dr. Larry Fannin was appointed Campus Dean. Dr. Fannin brings with him three decades of academic experience, both as an educator and administrator. Prior to joining the University of Southern Nevada, Dr. Fannin served as associate dean for academic and student affairs and professor of pharmacy practice at the Hampton University School of Pharmacy in Hampton, VA. While there, Dr. Fannin played an instrumental role in the planning, development and implementation of the University’s School of Pharmacy, the 81st college/school of pharmacy to be established in the United States. He also provided oversight of the School’s academic program development and faculty and student recruitment activities.



HERBS IN PREGNANCY AND BREAST FEEDING

Many women of child-bearing age use dietary supplements, including herbal preparations. The Pregnancy Risk Line receives nearly 50 calls each month regarding herbs. Pregnant or breastfeeding women use these products for many reasons. One common reason is that they have always used them, and do not want to give them up during pregnancy. Another reason is that they’ve been told they can’t use their regular medication while pregnant and they’re told by friends and family members that the products are natural and, therefore, safe. Unfortunately, these products are not studied to determine if they cause problems for a pregnant woman, her fetus, or breastfed baby.

Herbs are drugs. They are pharmacologically active and may have side effects and drug interactions. However, because of the 1994 Dietary Supplement Health Education Act (DSHEA), herbs are not regulated as drugs. This act requires that the Food and Drug Administration (FDA) treat them as if they were foods, not drugs. This means that manufacturers have few testing requirements for safety and even less for efficacy. With such little regulation, these products are usually marketed without any experience of their use during pregnancy or while breastfeeding.

High doses of some vitamins and minerals have been found to cause problems for developing embryos, fetuses and breastfed babies. There is a wide variety of reported problems, including:

- Birth defects from vitamin A in the form of retinol in doses higher than 18,000 I.U. [per day]
- Dependency on vitamins B and C after mega doses in the third trimester
- Liver toxicity from mega doses of vitamins E & D in late pregnancy

The commonly held idea that natural compounds are safe can be dangerous when one considers that substances such as arsenic and cyanide can be naturally occurring. Even innocuous compounds can be deadly, if the dose is high enough. The old adage, “The poison’s in the dose” holds true.

Because of the lack of regulation, there is little funding available for research with herbal products. Thus, it is difficult to improve our knowledge of the effects of herbal preparations on pregnancy, the fetus, and the breastfed infant. Additionally, knowing for sure what a product actually contains and in what dosages is often not possible. As a result, even the most carefully designed studies of pregnancy outcomes among women taking these products cannot provide conclusive information. For example, what may be called, 'ginseng' in one product may be Siberian ginseng, American ginseng or any number of other plant products, each completely unrelated to the other. What may be labeled as 'Echinacea' could be the flower, leaf, or stem; all of which have very different components and activities.

For these reasons, herbal products are best avoided during pregnancy and while breastfeeding. Until controlled studies of well-regulated and characterized products can be accomplished, our knowledge of their effects during pregnancy will remain incomplete.

For information about specific herbs or other dietary supplements, contact the Pregnancy RiskLine at 800-822-2229 (BABY). The RiskLine is a joint effort between the Utah Department of Health and the University of Utah Health Sciences Center, and has been educating health care providers and families about exposures in pregnancy and breastfeeding for 20 years.

BLUE BABY FROM A PEDIATRIC BENZOCAINE PRODUCT

A 15-month-old previously healthy female presented to the hospital emergency department because she was noted to be markedly cyanotic, had rapid breathing and was acting fussy. Vital signs on arrival were: Temp. 36.8 degrees C, HR 191 beats/minute, BP 133/98 mm Hg, respiratory rate 56 breaths/min, O₂ saturation 80%. 100% oxygen was started and labs were obtained. Complete blood count and electrolytes were all within normal limits, with the exception of a CO₂ of 17 mEq/L. Her methemoglobin (MHb) concentration was 57%. Methylene Blue, 2 mg/kg, was administered by slow IV push over 5 minutes. Approximately 2 hours after administration of methylene blue, her MHb concentration had dropped to 3.3% and cyanosis had resolved. She was admitted for overnight observation and discharged the next day with referral for genetic testing. Her mother stated that she had used Baby Oragel® (benzocaine 7.5%) only once according to the manufacturer's instructions and presented a 0.42 oz tube that was still almost full. She said that the child's symptoms started 30 minutes after the application.

Methemoglobinemia is a potentially life threatening condition caused when the ferrous ion (Fe²⁺) is oxidized to the ferric (Fe³⁺) state within the hemoglobin molecule. MHb is incapable of carrying oxygen or carbon dioxide which results in cyanosis, impaired aerobic metabolism and metabolic acidosis. Exposure to an oxidizing agent by the oral or dermal route is the most common cause of methemoglobinemia. The dose required to induce methemoglobinemia is highly variable. Neonates, individuals with methemoglobin reductase deficiency or Glucose-6-phosphate dehydrogenase (G6PD) deficiency are particularly sensitive to oxidizing agents because of an inability to regenerate normal hemoglobin after an exposure. Many drugs and chemicals are strong oxidants, among these are nitrates, fertilizers, aniline dyes, local anesthetics and some antimicrobials. A partial list of agents capable of causing methemoglobinemia is shown in Table 1.

Table 1

Local Anesthetics	Analgesics	Other Medications	Nitrates/nitrites	Other
Benzocaine Cetacaine Lidocaine Prilocaine Bupivacaine	Phenazopyridine Phenacetin	Antipyridine Chloroquine Dapsone Methylene blue Menadione Metoclopramide Nitroglycerine Nitroprusside Phenytoin Primaquine Sulfonamides Trimethoprim	Ammonium-nitrate Amyl nitrite Butyl nitrite Fertilizers Well water	Aniline dye Smoke-inhalation Naphthalene-moth-balls

Signs and symptoms of methemoglobinemia are caused by decreased oxygen saturations and cellular hypoxia. Normal MHB concentrations are approximately 1%. Patients with concentrations up to 30% may be relatively asymptomatic except for a pronounced bluish discoloration of the skin, especially in the lips and nail beds. As MHB concentrations rise above 30%, symptoms consistent with oxygen deprivation develop which include headache, lethargy, dizziness, and nausea and can progress to seizures and coma. Pulse oximetry in patients with methemoglobinemia may show low oxygen saturations but cannot determine the actual percentage of MHB in the blood. Actual MHB concentrations can only be determined from a blood sample.

Mild methemoglobinemia (< 20%) will usually resolve with supplemental oxygen. Patients with methemoglobinemia should be treated for MHB concentrations >20% if symptomatic and >30% regardless of symptoms. Methylene blue is the treatment of choice. Symptoms usually respond rapidly to treatment with 1-2mg/kg given as a 1% solution IV over several minutes. Since methylene blue is an oxidant and can also cause methemoglobinemia, it should be used with caution, especially in infants and patients with G6PD deficiency. Exchange transfusion should be considered for patients with severe methemoglobinemia or for whom methylene blue is contraindicated.

Our case was a child that, according to the mother's history, received only one dose of a pediatric strength topical anesthetic and developed methemoglobinemia, something that would not normally be expected. It is

possible that this child has a genetic predisposition to develop methemoglobinemia from oxidant stress. Methemoglobinemia is a potentially life threatening condition which can usually be prevented by avoidance of offending toxins and proper use of medications, although it may occur in susceptible individuals even when such medications are used in very small amounts. It is important to counsel patients on the proper use of topical anesthetics and other drugs capable of causing this condition. Contact the Utah Poison Control Center for assistance in the treatment or diagnosis of this condition.

John Stromness, R.Ph.
Kathleen Anderson, PharmD

Register to Receive "Toxicology Today" by Email!
The Utah Poison Control Center publishes a quarterly newsletter for health care professionals. Features include a clinically relevant, concise article on a poisoning topic, Poison Pearls, Toxins in the News, FDA Alerts and outreach education notices. Beginning with the next issue, it will be distributed electronically via email. In order to receive the newsletter, please go to the UPCC website www.utahpoisoncontrol.org/newsletters and register. Hard copies will no longer be mailed. If you need assistance or don't have email, please call (801) 587-0600.

For Immediate Release
January 8, 2007

UNIVERSITY OF UTAH'S COLLEGE OF PHARMACY RECEIVES \$20 MILLION DONATION FROM THE ALSAM FOUNDATION

Gift launches fund-raising campaign for new building to house pharmacy researchers working on treatments for diseases such as cancer, epilepsy, and diabetes.

Salt Lake City—The University of Utah's College of Pharmacy has received a \$20 million donation from The ALSAM Foundation to assist with the design and construction of a new research and education building.

"Today, we take special pride in moving forward with a new research building that will honor L.S. "Sam" Skaggs for his remarkable vision and extraordinary generosity," said John W. Mauger, Ph.D., professor and dean of the College of Pharmacy. "This new building will foster interdisciplinary research that makes a real and lasting difference in the lives of people worldwide suffering from diseases such as cancer, epilepsy, diabetes, pain, and other genetically related diseases."

The new facility will be located adjacent to—and connected to—the current pharmacy building, which opened in 1965 and is named in honor of L.S. Skaggs, Sr. who died in 1950. The new building will be named in recognition of his son, L.S. "Sam" Skaggs.

"Over forty years ago, L.S. Skaggs, provided the funding to make possible the construction of the L.S. Skaggs Hall, which was named after his father," said Ronny L. Cutshall, president of The ALSAM Foundation. "Today, the University of Utah's College of Pharmacy is embarking on a capital campaign to raise the funds to design and construct a new state-of-the-art research and education building. The ALSAM Foundation and the Skaggs family are pleased to continue the partnership and association with the college by providing the lead gift. We are confident that with this facility the college will be able to continue, and even surpass, its contribution to research and education in the pharmaceutical field and to the health of the people in Utah, America, and the world."

University of Utah President Michael K. Young noted, "It is a fitting tribute that these two pharmacy buildings will be named in honor of father and son, and will be connected to each other. The support of the Skaggs family has been vitally important in establishing and sustaining the college as one of the very top-ranked pharmacy programs in the nation," said Young. The college is nationally recognized for training pharmacy professionals and for research into new medications and drug delivery systems. It's currently ranked second among all colleges of pharmacy by the National Institutes of Health (NIH) for peer-reviewed research, and has been ranked among the top four pharmacy colleges in the country since 1975. Its doctorate of pharmacy program was ranked 14th in 2006 by U.S. News and World Report.

The college has earned its reputation by training outstanding pharmacists, and through prolific research that has led to new medications and advances in drug delivery methods and treatments, according to A. Lorris Betz, M.D. Ph.D., University of Utah senior vice president for health sciences.

"Since its establishment in 1947, the College of Pharmacy has brought together faculty who are not only talented teachers, but also practical scientists able to translate research into care. Under the leadership of some remarkable deans, this college has created a culture of collaboration that is unmatched in the field of pharmacy," said Betz.

A number of Utah-based pharmaceutical and biomedical device companies trace their origins back to the college and its faculty, including Sentrx Surgical, Theratec, Macromed, and Echelon Biosciences. Many graduates of the college are also leaders at companies and universities worldwide.

Mauger points to epilepsy as an example of how the college has impacted human disease. He says each of the nine new antiepileptic drugs that have come to market in the past 30 years have passed through the college's NIH-sponsored Anticonvulsant Drug Development Program. The program has screened more than 30,000 epilepsy medications since it was established by the late Ewart A. Swinyard, a former dean and researcher.

Mauger says the need for a new building is similar to what the college faced in 1965 when it moved into the current facility. "In 1964, the Skaggs family made a generous donation that allowed us to build our current college, and move out of the top floor of what had been the former women's gymnasium building," he said. "Today, the continued generosity of the Skaggs family gives us the opportunity to bring together faculty who have been relocated across campus because of lack of space at the college. We're as excited today as our predecessors were 43 years ago."

The college plans to raise an additional \$50 million for its new building, with most of the funding coming from private donations. "Our hope is to begin construction sometime in 2009 with the project being complete by 2011. We are planning a very aggressive fund-raising campaign and this gift from the ALSAM Foundation gets us started on the right foot," said Mauger.

For more information about the college, visit www.pharmacy.utah.edu

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Background on the The ALSAM Foundation and Skaggs Family

The ALSAM Foundation is named in honor of L.S. "Sam" and Aline Skaggs. The Foundation supports a variety of causes and organizations, and is committed to improving the lives of people around the world. In recent years, the Foundation has made significant donations to the University of Utah, The Scripps Research Institute, numerous colleges of pharmacy across the Western United States, and many other organizations.

Mr. Skaggs married the former Aline Wilmot in 1949, after serving four years in the U.S. Army Chemical Warfare Service in Europe during World War II. The couple has four adult children.

Often credited as the father of the modern super drug-store chain, Mr. Skaggs took over his family's grocery store business after his father's death in 1950. Mr. Skaggs grew the business from a regional industry leader into American Stores, which at one time was the third largest food and drug chain in the country.

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