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125 YEARS OF PHARMACY 1886–2011 PAST, PRESENT & FUTURE

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CHARTER MEMBERS.

In this issue: President's Perspective 2011 Convention Information SDSU Pharmacy Students Excel Once More

PHARMACIST

Volume 25 Number 2

South Dakota Pharmacists Association 320 East Capitol Pierre, SD 57501 (605)224-2338 phone (605)224-1280 fax www.sdpha.org

"The mission of the South Dakota Pharmacists Association is to promote, serve and protect the pharmacy profession."

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Vice President Else Umbreit

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Senior Secretary Kim Kocmick-Burden

Secretary Melanie Houg

SDPhA CALENDAR

Please note: If you are not on our mass e-mail system check our website periodically for district meetings and other upcoming events. They will always be posted at: *http://www.sdpha.org*.

April

3

- 1-2 SD Society of Health-Systems Pharmacists (SDSHP) Annual Meeting Rapid City, SD
 - Mitchell District Meeting 6:30 p.m. Blarney's meeting Room - Mitchell Mall
- 10 Mobridge District Meeting 6:00 p.m. Bob's Steak House in Gettysburg
- 14 Sioux Falls District Spring Meeting & SDSU ASP Auction 5:30 p.m. Ramada Inn & Suites
- 24 Easter Sunday
- 28 Black Hills District Meeting 6:00 p.m. Arrowhead Country Club, Banquet Room

May

- 26-28 ASCP'S Midyear Conference and Exhibition Phoenix, AZ
- 30 Memorial Day

June

SDPhA 125th Annual Convention

Sheraton Hotel & Convention Center, Sioux Falls, SD

July

4 Independence Day 15-16 SDPhA Board Retreat

August

1

4-6

- Licence Renewal Window Opens
- National Association of Boards of Pharmacy (NABP) District V Meeting

For more information about district meetings turn to page 27

Cover Collage by: Kristin Kellar and Sue Schaefer

SOUTH DAKOTA PHARMACIST

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South Dakota Pharmacists Association

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PRESIDENT'S PERSPECTIVE



Earl Hinricher SDPhA President

Changing seasons,

Exposure to radiation as in Japan today brings back the memories of Hiroshima and the end of World War II. The events of the past few weeks have re-awakened us to those old concerns of atomic energy and safety. Last year a 93 year old survivor of both bombings at the end of the war died of stomach cancer. Once again, we ponder on the lasting effects of a nuclear accident.

Back at home in 1945, pharmacists were marketing the use of the "can". Many of our parents and grandparents read ads such as "no other container protects like a can" or "household needs stay safe in a can". A few products marketed in a can at that time were aspirin, talcum powder, ointments, and tooth powders.

Other news in 1945 was the founding of the Lemmon Pharmacol Company known today as Teva Pharmaceuticals. The GI Bill was implemented to assist returning war veterans with the cost of college. And the VA and SDPhA worked out a program which allowed local disabled veterans to obtain their prescriptions from their local pharmacies.

South Dakotans tend to be survivors. They plow through tough winter months such as this winter. The Legislative Session tends to be on the minds of many, this year being no exception. This year your association office monitored a number of bills throughout the process. House Bill 1052 precipitated discussion over the tech to pharmacist ratio. Many of you were on both sides of this discussion. The bill failed in committee. Many felt this was not a legislative process, but a rule making process of the Board of Pharmacy. Senate Bill 127 provided standards for electronic prescription transmission. Many of our partners in healthcare had numerous concerns about the bill and voiced those concerns in committee. The bill failed in committee also.

The budget was a great concern. We owe our thanks to Bob Riter and Sue Schaefer for their work in Pierre and their ability to educate many during the session in our absences. Pharmacists had taken a reduction last year and that was taken into consideration this year. Additional funds were found. So the proposed 10% reduction was reduced to 3.8%. We wait to hear how the reduction will be implemented.

Our Legislative Days event fell victim to brutal winter weather this year. A few hearty souls braved the weather to attend the Legislative Briefing, and followed up the next morning at the Capitol. Members of the House and Senate members usually appreciate the health screening/ visit by our students, pharmacists and faculty. Unfortunately, the weather prevented most of us from traveling to Pierre for that event, but we've already scheduled this important event for 2012, so save the date of January 31st and February 1st, 2012!

Past President Cole Davidson was selected by the Governor's Office to participate on the Medicaid Savings Workgroup. This workgroup focuses on the exchange of ideas to better manage services to the Medicaid population as well as managing the cost of services.

I will be attending the Annual APhA meeting in Seattle later this month as your delegate from South Dakota. I will also have the opportunity to meet with some of our students who plan on making the trip as well.

The DEA and local law enforcement will be holding another "Take Back Day" in April. Take the time to see if your local law enforcement is participating in this program. It is important for you to encourage the public to remove unwanted and unused medications from their homes. It is important to promote safety and prevent the misuse or abuse of unneeded or unused medications. If your community is not participating in the program, encourage your clients to destroy those unneeded or unused medications. Too many times we hear about such medications falling in to the wrong hands. This is an opportunity for you and your pharmacy to partner with the DEA and your local law enforcement.

Finally, mark your calendars for June 3-5, 2011. SDPhA Annual convention will be focusing on 125 years of pharmacy. The event will take place in Sioux Falls at the Sheraton Hotel & Convention Center. Plan to attend and network with friends and classmates. Share stories about the practice of pharmacy over the years in your community. This may require a little research and an opportunity to discovery history.

Spring is here. Members in your area are planning spring district meetings. I hope to see you there during my travels.

Earl Hinricher, SDPhA President

DIRECTOR'S COMMENTS



Sue Schaefer Executive Director

C-E-L-E-B-R-A-T-E Good Times, C'Mon!

We're quickly approaching the celebration of South Dakota Pharmacy's 125th Anniversary, can you believe it? As I look back through the history of the South Dakota Pharmacists Association, so many things have changed about the way you practice. In June I hope you all take the time to join together to celebrate your tremendous success.

At this year's meeting we will have plenty of opportunity for needed continuing education, but we'll also be taking the time to recognize past award recipients and past leaders of your association. We'll also do our best to impart a little historical knowledge through the concerted efforts of many South Dakota Pharmacists who have collected various apothecary curiosities over the years...prepare to be amused and enlightened!

The registration form for convention is located on our website at www.sdpha.org, or you can find the form located within the January and April issues of South Dakota Pharmacist. Please plan to join us to show your support for your profession and enjoy some fun with your pharmacy friends.

I just returned from the APHA meeting in Seattle, where I attended our National Alliance of State Pharmacy Associations (NASPA) meetings as well as a few of the continuing education sessions. Many of the sessions centered upon the role pharmacists can play in patient-centric care models. We've bent your ear regarding disease state management and the value of MTM services. The time has come for pharmacy to step up and become more active and vocal about the expanded services you can provide as practitioners. Expanded collaborative practice agreements, and pay-for-services are where pharmacy should be positioning. Yes, it's a paradigm shift, but it's critical that we demonstrate the expertise pharmacists have in the delivery of services and extreme value they provide to the healthcare team. Accountable care organizations and the development of medical home models, and health information technology matters are being discussed nationally, developed locally, and should be on all of our radar screens if we hope to engage pharmacists in the future of pharmacy practice as a valued member of the healthcare team.

Switching gears, I want to take this opportunity to congratulate our SDSU College of Pharmacy students in their outstanding 100% NAPLEX pass rate this year! We continue to enjoy an excellent relationship with the College and students and are so very proud of their accomplishments.

I hope this note finds you all well. As always, our door is always open, and I look forward to celebrating our 125th Anniversary with many of you in Sioux Falls in June.

Warmest Regards,

Sue



South Dakota Board of Pharmacy



Ron Huether Executive Secretary

50-YEAR PHARMACISTS

Congratulations to seven pharmacists who have been registered with the South Dakota Board of Pharmacy for 50 years: Thomas Bartholomew, Faulkton; Marshall Davis, Nisswa, MN; Larry Detmers, Sioux Falls; Cyril Frick, Sequim, WA; James Sheets, Lincoln, NE; Leroy and Sharon Stacey, Sun City, AZ. All seven are graduates of South Dakota State University.

These pharmacists will be honored at the 125th Annual Convention of the South Dakota Pharmacists Association in Sioux Falls – June 3-5, 2011.

NEW REGISTERED PHARMACISTS

The following candidates recently met licensure requirements and were registered as pharmacists in South Dakota: Nathaniel Bossert, Ralph Curdie, Pamela Ekern, Gregory Hall, John Hamilton, Germon Hill, Eric Jorczak, Jane Kampfe, Richard Shoopman and Leroy Thaemert.

NEW PHARMACIES

Pharmacy licenses have been issued recently to: Sams Pharmacy #10-6565, Rapid City, Margaret Anderson, Pharmacist-in-charge.

SECOND NATIONAL TAKE-BACK DAY SCHEDULED

Due to the overwhelming success of the first event, DEA is planning a second National Prescription Drug Take Back Day on Saturday, April 30, 2011. This will be a great opportunity for those who missed the first event or who have subsequently accumulated unwanted, unused prescription drugs, to safely dispose of them.

This initiative addresses a vital public safety and public health issue. More than seven million Americans currently abuse prescription drugs, according to the 2009 Substance Abuse and Mental Health Administration's National Survey on Drug Use and Health. Each day, approximately, 2,500 teens use prescription drugs to get high for the first time according to the Partnership for a Drug Free America. Studies show that a majority of abused prescription drugs are obtained from family and friends, including the home medicine cabinet.

In an effort to address this problem, DEA, in conjunction with state and local law enforcement agencies throughout the United States, conducted the first ever National Prescription Drug Take Back Day on Saturday, September 25, 2010. The purpose of this National Take Back Day was to provide a venue for persons who wanted to dispose of unwanted and unused prescription drugs. This effort was a huge success in removing potentially dangerous prescription drugs, particularly controlled substances, from our nation's medicine cabinets. There were approximately 3,000 state and local law enforcement agencies throughout the nation that participated in the event. All told, the American Public turned in more than 121 tons of pills on this first National Take Back Day.

This provides a great community service opportunity for pharmacists. The Board encourages you to contact your local law enforcement officials and help support and promote this effort in your community. Further information about the second National Prescription Drug Take Back Day, including a link to locate a collection site near you, will be posted on this website. http://www.deadiversion.usdoj.gov/drug_disposal/takeback/index.html

PHARMACIST PRECEPTORS

Board Staff often gets questions from pharmacists regarding requirements to serve as a preceptor for a pharmacy intern. Administrative Rule 20:51:02 provides a comprehensive overview of these requirements. The following sections of the rule provide answers to some of the more common questions from preceptors.

20:51:02:11. Supervising pharmacist requirements. A registered pharmacist who agrees to supervise the practical experience of a registered pharmacy intern must certify this on a form provided by the board and agree to abide by the South Dakota pharmacy law and the rules of the South Dakota Board of Pharmacy. A pharmacist must be in continuous contact with and actually giving instructions to the intern during all professional activities of the entire internship. Interns may receive written or verbal prescriptions if the pharmacist reviews and makes the necessary professional determinations about the medication order, including the name of the drug, its strength and dosage, directions for use, and the number of allowable refills.

A pharmacist must verify the accuracy of all information entered into the computer by the intern. The identity of the pharmacist must be included in the record.

The pharmacist must inspect the prepared prescription and verify the accuracy of the preparation, and its labeling, prior to dispensing the prescription to the patient or patient's representative.

20:51:02:11.01. Number of interns. A pharmacist may not supervise more than one pharmacy intern at a time in the pharmacy. The pharmacy intern does not count for purposes of the ratio of technicians supervised by the pharmacist.

TECHNICIAN EDUCATION AND CERTIFICATION

The National Association of Boards of Pharmacy (NABP) recommends that state Boards of Pharmacy require all pharmacy technicians to be nationally certified by the year 2015. Many states have already enacted laws or adopted rules requiring completion of an accredited education program and certification for all pharmacy technicians. The Board is very interested in the opinions of pharmacists regarding future changes or additions to our requirements for pharmacy technicians.

There are three accredited pharmacy technician educational programs available in South Dakota. Western Dakota Technical Institute; Rapid City Barbara Simmons (605-718-2906) barbara.simmons@wdt.edu National American University; Sioux Falls Tracy Bultena (605-336-4686) tbultena@national.edu Southeast Technical Institute; Sioux Falls Debborah Cummings (605-367-5743) debborah.cummings@southeasttech.edu

The Board receives requests for Technician training materials, course work, or programs available to assist pharmacy technicians in preparing for the national certification exam. The Pharmacy Technician Certification Board (PTCB) has many training manuals listed on their website. Many of these manuals can be purchased at area book stores or on-line. www.PTCB.org - click on the resources icon. Other available options include: Pharmacist Letter – www.pharmacistletter.com American Pharmacists Association – www.pharmacist.com/shop apha

ANY CHANGES RECENTLY?

The Board staff sends out communications to pharmacists and technicians throughout the year. The office needs accurate information so that you will receive this information in a timely fashion. Please report changes such as – name, home address, work address, phone numbers, e-mail address, etc. Technicians are required to report within 10 day (see ARSD 20:51:29:15). A change in pharmacistin-charge must be reported immediately (see ARSD 20:51:06:02.01). The Change of Name or Location forms can be located on our website at www.pharmacy.sd.gov or you may simply send an e-mail message to one of the staff with your changes.

BOARD MEETING DATES

Please check our website for the time, location and agenda for future Board meetings.

SOUTH DAKOTA PHARMACISTS

Currently there are 1,708 pharmacists holding active South Dakota licenses. 1055 of these pharmacists live in South Dakota. 651 live in other states. One lives in Australia and one in South Korea.

NEWSLETTERS

Please read all Newsletters and keep them for future reference. The Newsletters will be used in hearings as proof of notification. Please contact the Board office at 605-362-2737 if you have questions about any article in the Newsletter. Past Newsletters are also available on the Board's Website.





The Missing Piece in Overstock Inventory!

MatchRX is a web-based marketplace developed exclusively for pharmacists to buy and sell overstocked prescription drugs to one another. Their mission is to connect pharmacists throughout the US to help manage inventory more efficiently. Visit the site at www.MatchRX.com. When you register make sure to put in SDPhA in the "referred by" field. If you need any assistance in the meantime, feel free to call 877-590-0808.

Whether you manage one or fifty pharmacies, MatchRX is a tool to help you increase your turns and save thousands of dollars every month in each location. As written in the July 2010 issue of America's Pharmacist, there are multiple reasons to incorporate MatchRX into your everyday routine. You'll benefit by becoming more efficient through increasing your turns, reducing carrying costs, reducing waste in landfills and waterways, to saving money when purchasing (Average Savings of 22% off WAC) and selling on the site. Members who use the site regularly save \$2,000 - \$5,000 per month. When you register make sure to put in SDPhA in the "referred by" field on the registration page. **Just by registering (free!), MatchRX will provide support to the SDPhA for each referral!** If you need any assistance in the meantime, free free to contact them at 877-590-0808. Daily issues in the pharmacy occurs when an item is partially dispensed and the remaining portion remains on the shelf for months or even years because the patient changed the prescription, moved, or may have stopped taking the drug altogether. With MatchRX, you can transfer these partilly dispensed drugs to another pharamcy using the marketplace.

Visit www.MatchRX.com to Register



3250 West Big Beaver Rd | Suite 228 | Troy, MI 48084 | 877-590-0808 | www.MatchRX.com

South Dakota Pharmacist



South Dakota State University College of Pharmacy





Dennis Hedge Dean

At a recent meeting of the American Association of Colleges of Pharmacy, there was much discussion on the role of colleges/schools of pharmacy in expanding pharmacists' roles in the delivery of patient-centered care. As a profession, it is essential that we demonstrate the value of pharmacy services and medication management within emerging care models such as medical homes and accountable care organizations. Although the College is currently facing budget challenges, we are committed to contributing to the development of these new models. To better position ourselves in this manner, the College is currently recruiting faculty with the ability to lead change and improve medication management. The College is also seeking collaboration opportunities to further this important work. If you are interested in exploring such opportunities, please call us at the College.

Speaking of important work, the College is currently in the process of selecting the 80 students that will compose our incoming P1 class. The College received 232 applications to the Pharm.D. program this year and the quality of the applicant pool remained quite strong. As in years past, several of you assisted with applicant interviews and we thank you for your involvement.

A significant milestone was also recently reached when the College moved into the new research labs of the Avera Health and Science Center during the week of March 7. Demolition of Old Shepard Hall is scheduled for May of 2011, which will complete the Avera Health and Science Center construction project. Also of note, construction of a new office complex for the Department of Pharmacy Practice at University Center – North in Sioux Falls will occur this summer. Construction will be completed in time for the start of the Fall 2011 Semester. In closing, I would like to highlight some data that was recently released regarding US colleges of pharmacy. Data published on the National Association of Boards of Pharmacy website indicates that SDSU was one of only six colleges/ schools of pharmacy in the United States to have a 100% NAPLEX pass-rate this past year. In addition, SDSU ranked 53rd out of the 121 pharmacy colleges/schools in National Institutes of Health grant funding this past year, marking progress in this area. When evaluating NIH funding per FTE, SDSU's NIH Funding Rank was #38 out of the 121 pharmacy colleges/schools.

As always, we would welcome your visit if you are in the Brookings area.

Warm regards,

Dennis D. Hedge, Pharm.D. Dean and Professor SDSU College of Pharmacy



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For Hotel Reservations Call: Sheraton Sioux Falls Hotel & Convention Center 1211 West Avenue North (605) 331-0100		I would like sponsor a student. I have included an additional gift of I would like to contribute to the SDPhA Commercial & Legislative Fund. I have included an additional amount of	ent. I ha	ave incl PhA C	uded a ommel	ave included an additional gift of PhA Commercial & Legislative Fund. I have included an additional amount of	onal gift Legisla	t of ttive Fu amoun	nd.	23
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ACADEMY OF STUDENT PHARMACISTS



Jared Sogn President, APhA - ASP

Greetings from APhA-ASP!

The cold weather may try to keep us down, but it cannot keep our members from staying active and heating things up! We have taken the momentum of the fall semester and continued to push the envelope even more! The semester kicked off with final planning for Legislative Days in Pierre, with a record 80 students planning to attend and perform screenings. However, the trip was cut short at the last minute due to the frigid weather we were experiencing, leaving our members even more eager for next year! This March, members of our patient care committees will be making up for it by providing screenings for all SDSU employees at the employee fair.

This semester has seen many different service projects, reaching out to many causes! In December and January, the Service Committee helped with the Brookings Backpack Project, and will be helping again at the end of March. In February, members made baby blankets and donated them to the Brookings hospital to give to new babies. Several other service projects are planned for the coming weeks, including Relay for Life, and the CMN State-a-thon to raise money for Children's Miracle Network.

February marked a symbolic new beginning for P1 students as they received their white coats on the 3rd. The White Coat Committee put in a lot of hard work that paid off to provide a wonderful ceremony for the newest members of the profession! Later in the month, the Prepharmacy Committee put on several events to prepare the new applicants for interviews, including an interview night with Dr. Hansen, as well as a fun fashion show for the students to exhibit professional dress for interviews. The end of February also marked the beginning of a new executive committee following elections! The following were elected officers for 2011-2012: Sara Wettergreen, President-elect; Hillary Gerster, Vice-president; Miranda Mercer, Corresponding Secretary; Rachel Pavelko, Recording Secretary; Megan Buysse, Treasurer; Ryan Rasmussen, Webmaster; and Justin Cunningham, Delegate. Our new executive board plans to jump to work and continue the excellent work of the previous executive members!

March began with the first ever potluck held in conjunction with the International Pharmaceutical Students' Federation. After tasting several delicious foreign and domestic dishes, students and faculty began bidding at our annual fundraising auction held in Brookings. Several exciting items went up for auction, including a golf outing with Dr. Hansen, a traditional Indian meal with Dr. Dwivedi, several baskets and gift certificates, and investment sessions with Dr. Hendricks. In addition, we will be holding our Sioux Falls fundraising auction on April 14th following the SDPhA Sioux Falls District Meeting in the Ramada Inn. We hope to see you there! March will end with the APhA National Meeting in Seattle, WA. Currently, 28 members will be flying out for an extended weekend of meetings, networking, and social events. We are very excited to have such a large interest in this event this year!

After a successful turnout at the Residency Showcase in Sioux Falls last fall, we decided it would be a great event to hold in Brookings! Current residents as well as faculty and preceptors will be coming to a meeting to give students a presentation about residencies, and answer questions students may have about the programs and application process. Later in the month, a few speakers from McKesson will be coming to Brookings to talk to the chapter about starting an independent pharmacy.

April will kick off with the annual Tobacco Cessation Middle School Lock-In Night. The eventis aimed at middle school students to teach them of the dangers of smoking, while doing so in a fun, laid back environment. The Tobacco Cessation Committee held a bake sale and raffle to raise money for the event.

In addition to our hard work and dedication, our members also know how to have fun and relax! The Prepharmacy Committee held another ice skating event at the Larson Ice Arena to let students take a break and socialize. After the Residency Showcase, the members will enjoy a nacho feed, as well as appetizers at Cubbies after the McKesson presentation!

We hope to continue our strong involvement this semester, but we need all the help we can! With increased interest in attending the National Meeting, as well as increased programs, your support is more important than ever! We hope to see you at the auction in Sioux Falls on April 14th. We also have cookbooks available for \$20, which you can purchase by contacting our Treasurer, Megan Buysse, at mjbuysse@jacks. sdstate.edu. We greatly appreciate your support!

With regards,

Jared Sogn

APhA-ASP SDSU Chapter President

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FACULTY

Andrew Spain, Certified Manager, Society for Simulation in Healthcare, Minneapolis, MN Richard Honke, MD, Avera St. Benedict Health Center, Parkston, SD Diane Weber, PA-C, Weber Medical Services, Martin, SD (Professional information about the faculty: <u>www.YRAHEC.org</u>.)

GOAL: Provide rural health providers, i.e. physicians, physician assistants, advanced practice nurses, and pharmacists, with training to enhance their ability to precept interdisciplinary students in rural settings.

OBJECTIVES:

- 1. Summarize the techniques for precepting based on the theoretical models presented.
- 2. Give examples of effective precepting behaviors.
- 3. Describe ways in which you can modify your behavior to be a more effective preceptor.
- 4. Explain some of the ethical and professional considerations related to precepting.
- Distinguish some of the precepting needs for the different disciplines.

Sponsored by Rural Experiences for Health Professions Students (REHPS) Grant from HRSA:

- Connects students in medical, physician assistant, advanced practiced nursing, or pharmacy programs with
 preceptors in rural/frontier areas of SD for 4 week experiences
- Administered through Yankton Rural AHEC
- Additional information: www.YRAHEC.org

Accreditation Statement: This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education through the joint sponsorship of Sanford School of Medicine of The University of South Dakota, The Yankton Rural AHEC and Avera Education & Staffing Solutions. The Sanford School of Medicine of The University of South Dakota is accredited by the ACCME to provide continuing medical education for physicians.

Avera Education & Stalling Solutions is an Approved Provider of continuing nursing education by CNE-Net, the education division of the North Dakota Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation.

Credit Designation: The Sanford School of Medicine of The University of South Diskots designates this educational activity for a maximum of 5.5 AMA PRA Category / Credit". Physicians should only claim credit commensurate with the estant of their participation in the activity.

This publication was partially funded by the Health Resources & Services Administration Award No. 098RH19719





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Second Quarter 2011

SD Society Health-System Pharmacists

Jan Opperman

SDSHP President

Happy Spring from SDSHP! The SDSHP Board is busy gearing up for our spring meeting – we hope you can take time out of your schedule to attend!

The 35th Annual SDSHP Conference - April 1 & 2, 2011 - Best Western Ramkota Hotel & Conference Center in Sioux Falls.

Our conference planning committee has put together another informative and entertaining conference and we look forward to getting together in Sioux Falls. At the time of press, our meeting may have already taken place. If not, please visit our website for more information and to register for this event at www.sdshp.com.

At the Annual Meeting we will be inducting new board members for the 2011-2012 year.

Our new board members include:

- President: Erin Christensen of Sioux Falls
- President-Elect: John Kappes of Rapid City
- Past President: Jan Opperman of Rapid City
- Secretary: Gary Van Riper of Brookings
- Treasurer: Steffanie Danley of Watertown
- Technician Board Member: Debborah Cummings
 of Sioux Falls
- Board Members: Deanna Visser of Sioux Falls and Katie Hayes of Rapid City
- Student Board Members: TBD

As always we would like to recognize Marilyn Eighmy of Brookings, Support Specialist, for all her assistance to SD-SHP. Special thank you to Jodi Wendte for her service to SDSHP as outgoing past president and to Katie Timm as our technician representative. Also, a very special thank you to our Student Board members Terry Hoffman and Lisa Becker for their efforts this past year!

Upcoming SDSHP Events:

• ASHP Delegates - The ASHP Summer Meeting will be held in Denver on June 11-15, 2011. Our South Dakota representatives to the ASHP House of Delegates this year are Tom Johnson and Mark Burgraff. We would like to thank them for their service and look forward to hearing from them about the HOD activities.

• 10th Annual Gary Van Riper Society Open Golf Classic will be held again this summer. Registration and event information will be made available in the near future on our website at www.sdshp.com. Please plan to attend and we thank you for your continued support.

• Membership Renewal and Recruitment - Membership to SDSHP is a great deal – and it's never too late to become a member of SDSHP! With \$50 for pharmacists and \$20 for technicians you can't beat the price. In return you will help advance the practice of pharmacy in health-systems across our state. Please check out our website (www.sdshp.com) for a membership form.

SDSU PHARMACISTS CONTINUE LICENSE EXAM EXCELLENCE

BROOKINGS, S.D. — Like a talented acrobat, the South Dakota State University College of Pharmacy continues to make the spectacular look routine.

For the 12th time in 13 years, the SDSU passing rate for first-time candidates taking the North American Pharmacist Licensure Examination was 100 percent. The 69 students in the Class of 2010 had an average exam score of 111.97, compared to a national average of 103.06.

SDSU was one of only six programs nationally with a 100-percent pass rate among first-time candidates taking the national exam in 2010.

College of Pharmacy Professor Jane Mort, associate dean for academic programs, credits the consistent success to "the quality of our faculty, who are highly committed to great teaching, and the great students we have."

The National Association of Boards of Pharmacy did not begin publicly releasing test results until 2004, but in the past five years the SDSU pharmacy program ranks fourth nationally with a first-time pass rate of 99.01 percent. The only programs ranking ahead of SDSU are the University of California-San Diego, the University of Kentucky and the University of Wisconsin. The 99.01 percent ranks first among nine pharmacy colleges in the North Central Region, where the mean is 97.17 percent.

Similarly, College of Pharmacy ranks ahead of its seven institutional peers — University of Nebraska Medical Center, Ferris State, Idaho State, North Dakota State University, Washington State, University of Missouri-Kansas City, and the University of New Mexico — whose average is 95.55 percent.

About South Dakota State University

Founded in 1881, South Dakota State University is the state's Morrill Act land-grant institution as well as its largest, most comprehensive school of higher education. SDSU confers degrees from seven different colleges representing more than 200 majors, minors and specializations. The institution also offers 30 master's degree programs and 14 Ph.D. programs.

The work of the university is carried out on a residential campus in Brookings, at sites in Sioux Falls, Pierre and Rapid City, and through Cooperative Extension offices and Agricultural Experiment Station research sites across the state.

PEER Portal Data Report

March 2011



E-prescribing PEER Portal Is Open for Business!

We have received almost 200 reports, but we need more!

- The pharmacist was the FIRST person to identify the error in 78 percent of reports
- The majority of reports involved problems with SIG/directions and quantity selection (see figure to right)
- In 38 percent of the reports the incidents reported were "near misses" but in 5 percent the incident REACHED patients
- On average, reporters spent 12 minutes initially resolving each incident and 8 hours until fully resolved



Some comments received through PEER Portal:

"Wrong strengths, wrong quantities, wrong directions. We are also receiving multiple copies of the same script. This is costly and adding up."

"We received a prescription for the wrong patient. In counseling the patient on how to use the gout medication we had filled, she said she was not to have anything for gout as she doesn't suffer from gout."

"We received a faxed prescription for this medication at 3:07 p.m. An e-Rx for the same medication was received at 4:48 p.m. This creates extra work for pharmacy staff. It also risks one of the prescriptions being misrouted and ending up with active prescriptions at two pharmacies."

The PEER portal and instructions on how to report can be found at: <u>https://www.pqc.net/eprescribe</u>

Help us save lives ... Report eRx problems TODAY!

Phyllis Sour

SDAPT President

Greetings from SDAPT,

We are proud to announce that we have a new look and more user friendly website. Please check it out at www.sdapt.org. If you know of a technician who has not already renewed their SDAPT membership, I would like you to encourage them to renew. It really is a bargain at \$35.00. Some of the membership benefits are: subscription to the SD Pharmacists Journal, reduced registration fees for the SDPhA convention (savings of 60.00), and free registration for our SDAPT Annual Fall CE and Business meeting, which includes 4 to 5 hours of continuing education and a free meal. A printable membership form can be found on our new website.

We are in the process of looking for some volunteers that are interested in becoming officers in our organization. Our constitution and bylaws read:

"The officers of the Association shall be President, Immediate Past President, President Elect, Secretary, and Treasure. The President Elect shall be elected biannually and shall ascend successively to the office of President and Immediate Past President, serving for two years in each of these positions. All officers shall be elected biannually, but may not hold the same office for more that two consecutive terms. No person may hold more that one office concurrently. The officers shall presently be members directly involved with the Association activities and shall have been a member the previous year." We will be holding elections for President Elect, Secretary and Treasure. The election will take place during our Annual Fall Business Meeting/CE which will be held Oct. 1,2011 in Pierre, S.D. If you know of someone who is a current member and you would like to nominate them, please forward the information via email to any of the current officers. We welcome your comments and suggestions and encourage you to become involved in SDAPT and all of the activities of our state pharmacy organizations.

I would also like to encourage all technicians to register for the SDPhA convention which will be held June 3rd- 5th in Sioux Falls. The technician association will be holding an informal meeting on Saturday, June 4th, at 11:30 during the convention. These conventions are great events to meet with others in the pharmacy profession and to enjoy the excellent continuing education that is offered.

We will soon be making plans for our Annual Fall Business Meeting/ CE which is scheduled to be held at the CUC building in Pierre on October 1st and we would like any suggestions or comments on continuing education topics and events planned for the day. Please feel free to contact us at the email addresses printed below.

Contact Information:

Phyllis Sour, President-pep12009@rap.midco.net Twila Vavra,Pres. Elect-tvavra@hotmail.com Diane Feiner, Secretary-

Diane.Feiner@sanfordhealth.org Bonnie Small, Treasure-bnnsmll@yahoo.com

Attention All Past SDPhA Award Winners:

You are cordially invited to join the past presidents as we celebrate your achievements within the South Dakota Pharmacy Family!

Join us on Saturday, June 4, 2011 at the Sioux Falls Convention Center, Rooms 9 & 10 at 5 o'clock in the Afternoon

PLEASE RSVP TO ASSISTANT@SDPHA.ORG



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PHARMACY MARKING GROUP, INC



AND THE LAW By Don. R. McGuire Jr., R.PH., J.D

This series, Pharmacy and the Law, is presented by Pharmacists Mutual Insurance Company and your State Pharmacy Association through Pharmacy Marketing Group, Inc., a company dedicated to providing quality products and services to the pharmacy community.

YOU'VE BEEN SERVED!

The day that you had hoped would never come has come. The sheriff makes his way through the store, with papers in his hand, heading towards the prescription counter. The sheriff says, "Chris, I've got something for you." The sheriff hands you the summons and complaint and walks out of the store. A summons is the notice that a suit has been filed against you. A complaint is the actual lawsuit. Now what do you do?

The most important thing is to not ignore it. This event, service of process, is the start of a procedure that is very time-sensitive. Unfortunately, some defendants read through the complaint and conclude that it is either a bogus case or just a ploy to extract money from them. The worst thing you can do is to toss it aside or throw it in a drawer and forget about it. This is not something that is going to go away. Ignoring it is only going to cause you more problems. In fact, the clock started when the sheriff handed Chris the summons.

Court rules prescribe the time frame within which some sort of response to the summons must be made. Depending on the jurisdiction, this is typically 20 or 30 days, although there are some other limitations out there. If nothing is filed with the court before this time expires, the plaintiff may be able to file for a default judgment. A default judgment essentially says, "You failed to respond, you lose." If the plaintiff gains a default judgment, they can then begin to try to collect the money from you. The worst thing about a default judgment is that there is no deliberation on the facts or the issues of the case. You might end up paying on that bogus case that you tossed into the desk drawer.

The most typical response to a summons and complaint is to file an answer. The answer addresses all of the allegations made by the plaintiff. The responses are usually one of three possibilities; admission, denial, or not enough information. With an admission, you admit that the allegation is true. With a denial, you deny that the allegation is true. The third response is used when you don't know enough about the allegation to admit or deny it. For litigation purposes, this is treated as a denial.

A response needs to be made for each and every allegation in the complaint. The answer is also the place where affirmative defenses are raised. These are legal defenses that counteract the allegations against you. For example, raising truth as a defense to slander or libel.

However, there are circumstances when other filings are made instead of an answer. These are generally motions that raise a particular issue to the court. The purpose of these motions is to contest certain issues prior to actually working on the substance of the case via the answer. If you are successful on these issues, many times the case is thrown out and there is no need to work on the substance of the case. The issues contested here can include the lack of jurisdiction by the court, the case is filed in the incorrect venue, the summons and complaint was improperly served, the case failed to name the proper parties, or the case is a duplicate of a previously filed case in another court.

It takes time to evaluate the allegations, decide whether to file an answer and/or a motion and to decide what allegations need to be admitted or denied. Timeliness is your most valuable asset. Don't be an ostrich when you are served. Sticking your head in the sand won't make it go away and ignoring it could result in some serious negative ramifications for you. Call your attorney and/or insurance company as soon as possible. The more time they have to work on your response, the better it will be.

[©] Don R. McGuire Jr., R.Ph., J.D., is General Counsel at Pharmacists Mutual Insurance Company.

This article discusses general principles of law and risk management. It is not intended as legal advice. Pharmacists should consult their own attorneys and insurance companies for specific advice. Pharmacists should be familiar with policies and procedures of their employers and insurance companies, and act accordingly.

PHARMACY MARKING GROUP, INC

FINANCIAL FORUM

This series, Financial Forum, is presented by Pro Advantage Services, Inc., a subsidiary of Pharmacists Mutual Insurance Company, and your State Pharmacy Association through Pharmacy Marketing Group, Inc., a company dedicated to providing quality products and services to the pharmacy community.

TAKE ADVANTAGE OF THE SAVING YEARS

Preparing for retirement requires a plan, and that plan should consist of two important phases: the saving years and the retirement years. To achieve the goal of a financially secure retirement, you will have to make wise decisions during the saving phase of your plan.

For starters, if you plan to use IRAs to help you save, you need to decide what type of IRA you're going to use. Traditional and Roth IRAs have different eligibility requirements, and each has its own advantages. More than likely, your unique financial needs will make one kind of IRA bettersuited for you than the other, so it's a good idea to evaluate your options.

The main difference between traditional and Roth IRAs is the way their earnings are treated for tax purposes, so it's important you understand the concepts of tax-deferred and tax advantaged accumulation. With tax deferral, you only owe taxes when you withdraw money from the account. A traditional IRA lets you make contributions and pay taxes when you take withdrawals. Withdrawals prior to age 59-1/2 may be subject to a 1070 IRS penalty.

On the other side of the coin, tax-free growth means you don't have to pay federal taxes on your earnings. A Roth IRA offers the potential for taxfree growth on the after-tax dollars you invest, as long as you meet a few specific requirements. To avoid paying taxes on your Roth IRA earnings, you must have held the IRA for five years and you must be age 59½ or older at the time of withdrawal. Nonqualified withdrawals may be subject to income taxes and a 10% IRS penalty.

In addition to the difference in how earnings are taxed, another important consideration is the tax deduction possibilities of a traditional IRA. As long as you meet certain conditions, you may be able to claim a deduction on your income taxes based on the amount of your IRA contributions.*

To help illustrate our objective, let's consider an example. Suppose Kim, age 30, is thinking about investing for her future retirement security. Even before considering her IRA options, her first smart move would be to invest in her employer's 401(k) plan. Assuming she's already done that, let's think about her IRA options. With a modified adjusted Page 20 Second C gross income (MAGI) of \$30,000, she is eligible for either a tax-deductible contribution to a traditional IRA or a nondeductible contribution to a Roth IRA. To help her decide, she should think about her answers to a few key questions.

For one thing, how would she handle the immediate tax benefit (i.e. tax deduction) of a traditional IRA contribution? If she chooses to invest the money she would otherwise pay in taxes, her savings could get an additional boost. But if she chooses to spend it elsewhere, the deduction a traditional IRA offers may not help in building her retirement assets.

Kim also needs to ask herself how soon she will need to access her retirement savings. Any traditional IRA withdrawals before age 59½ will be taxed as ordinary income and may also incur a 10% IRS penalty. So if she expects to need access to her retirement savings before age 59½, taxand penalty-free access to Roth IRA contributions would probably prove valuable.

Additionally, Kim needs to think about whether her tax bracket during retirement will be higher or lower than what it is currently. This could provide valuable insight as to which account would be better suited for her, given the taxation of traditional IRA withdrawals versus the tax-free withdrawals from a Roth IRA.

Like our example, it's important for you to think about retirement savings well before you approach the time when you'll actually need the funds. Take steps now to get your savings started, and make the most of the years you have to add to that savings.

*This example is for illustrative purposes only and does not reflect the performance of any particular investment.

Provided by courtesy of Pat Reding, CFPTM of Pro Advantage Services Inc., in Algona, Iowa. For more information, please call Pat Reding at 1-800-288-6669.

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Second Quarter 2011

Continuing Education for Pharmacists

Natural Products: Burdock to Vitamin B-2

J. Richard Wuest, R.Ph., Pharm.D. **Professor Emeritus University of Cincinnati** Cincinnati, Ohio

and

Thomas A. Gossel, R.Ph., Ph.D. **Professor Emeritus Ohio Northern University** Ada, Ohio

Goals. The goals of this lesson are to present information on the claims, mechanisms of action, typical dosages used and other items of interest on natural products and nutraceuticals alphabetically from burdock to vitamin B-2, and to provide background information for assisting others on their proper selection and use.

Objectives. At the conclusion of this lesson, successful participants should be able to:

1. exhibit knowledge of the claims, mechanisms of action, and typical dosages for natural products and nutraceuticals presented:

2. select from a list, the synonyms for these products;

3. describe popular uses of the products discussed; and

4. identify sources for information on natural products.

This lesson is part of a series that presents an overview of the common uses, proposed mechanisms of action, typical dosage regimens and



Gossel

Wuest

other information of interest on natural products and nutraceuticals. Products reviewed in this article are listed in Table 1.

The paramount difference between drugs and natural products was explained in the first article in this series. However, since natural products are a very controversial topic for some individuals, the authors restate that the information presented is neither a promotion of nor a condemnation against their use. It is merely an overview of what has been reported in both the public and scientific literature, and certainly not an in-depth treatise. Additional sources (websites) of information on natural products are provided in Table 2.

Burdock (Arctium lappa, A. tomentosum), also known as bardane, beggar's buttons, burr seed, clotbur, cockle buttons, cocklebur, fox's clote, great bur. happy major, hardock, harebur, lappa, love leaves, personata, philanthropium and thorny burr, grows in northern Asia, central Europe and North America. The fruit, seeds, leaves and roots of burdock have been used for centuries as decoctions and teas for a variety of disorders including anorexia nervosa, cancer, colds, constipation, cystitis, fever, gout,

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rheumatism, stomach complaints, and sore throat. Burdock is also used as an aphrodisiac, blood purifier, diaphoretic (perspiration inducer), diuretic, and laxative.

Topically, it is used for a number of skin disorders including acne, carbuncles, dry skin, eczema, psoriasis, seborrhea of the scalp, and skin ulcers. Burdock is used as a flavoring agent for food in Europe and as a food in Asia.

Its constituent, arctiopiricin, is claimed to have antibacterial activity. However, no mechanism of action has been discovered for the traditional medical uses of burdock.

While no overt toxicities to burdock have been reported, an allergic reaction may occur in persons hypersensitive to chrysanthemums, daisies, marigolds, ragweed and other members of the Asteraceae/ Compositae family of plants.

The typical dose of burdock is 3-6 grams of dried root three times a day. As a tea, 1-2 grams is steeped in 150mL of boiling water for five to 10 minutes and then strained. The dose of the liquid extract (1:1 in 25 percent alcohol) is 2-8 mL three times a day. The tincture (1:10 in 45 percent alcohol) is taken in a dose of 8-12 mL, also three times a day.

Butcher's Broom (Ruscus aculeatus) also known as box holly,

Table 1 Natural Products Covered in this Lesson

Burdock Butcher's Broom Vitamin B-1 Vitamin B-2

Table Representative Sources for Info	inter propio program and program and the program interview.
American Botanical Council	www.herbalgram.org
Facts and Comparisons	www.factsandcomparisons.com
Food and Drug Administration	www.fda.gov (click on Food)
National Center for Complementary and Alternative Medicine of the National	
Institutes of Health	www.nccam.nih.gov
PDR for Herbal Remedies	
PDR for Nutritional Supplements	www.pdr.net
Pharmacist's Letter	www.naturaldatabase.com

Jew's myrtle, knee holly, kneeholm, pettigree, and sweet broom, is a lowgrowing evergreen shrub widely distributed throughout the Middle East and Mediterranean area as well as the southern U.S. It is not the same as the broom herb covered earlier in this series.

R. aculeatus has been used in folk medicine for over 2000 years, but received its common name in Europe where butchers tied its stiff twigs together and used it to clear their cutting boards. The portions of the plant used in herbal medicine are the rhizome (above ground root system) and underground roots.

Long used as a diuretic and laxative, in the 1950s it was discovered that extracts of the rhizomes of butcher's broom could cause vasoconstriction and might be useful in treating circulatory disorders. Substances in the extracts include steroidal saponins (ruscogenin and neoruscogenin), which are direct stimulators of alpha-adrenergic receptors in the peripheral blood vessels.

Butcher's broom gained increased popularity during the 1970s for use as an anti-inflammatory agent, and for the prevention of atherosclerosis and venous insufficiency. It is claimed that the herb reduces pooling of fluid in the legs (edema) and has a protectant effect on capillaries, venous endothelium and smooth muscle. It is also used for supportive therapy for leg cramps, peripheral vascular disease, and the itching and burning of hemorrhoids.

The typical dose of butcher's broom is equivalent to 7-11 mg of total ruscogenin/neoruscogenin in the form of standardized commercially available capsules, ointments and suppositories.

Vitamin B-1 (thiamine), also known as antiberiberi factor, antineuritic factor, aneurine, anurine, thiamin and thiaminium, can be synthesized by a number of species of plants. In mammals, intestinal bacteria can produce it, but most mammals, including humans, are dependent on dietary intake to sustain life.

Inadequate ingestion of vitamin B-1 can lead to its deficiency state, beriberi. This condition, first recognized in China 3500 years ago, is considered to be the earliest documented nutritional deficiency disorder. However, it was not until the early 20th century that thiamine was isolated and proof established that it was, indeed, a cure for beriberi.

The term beriberi is derived from an Asian dialect (Sinhalese) and means extreme weakness. Beriberi was very common in persons whose diets consisted principally of highly polished rice. While milling produces a more appealing looking rice, it removes the husk, which contains most of the vitamin B-1.

Vitamin B-1 deficiency leads to mental symptoms including depression, irritability, failure to concentrate, and memory defects. Subjective and objective changes in the peripheral nervous system have been encountered including tenderness of the calf muscles, partial anesthesia, muscle weakness (particularly of the lower limbs), as well as reduced or absent reflexes. Electrocardiographic recordings show developing cardiomyopathy. Additional complaints include weakness, loss of weight, anorexia, and gastric upset.

Vitamin B-1 deficiency is also associated with alcoholism. It can occur in some forms of malnutrition, parenteral nutrition when adequate amounts of vitamin B-1 are not injected, malabsorption syndromes, excessive carbohydrate ingestion, acute infections, and thyrotoxicosis. Drugs that reportedly lead to vitamin B-1 depletion include long-term use of loop diuretics and phenytoin.

The early warning signs of vitamin B-1 deficiency include anorexia, vomiting, easy fatigue, weight loss, nystagmus (rapid, involuntary movement of the eyeballs), peripheral pain, irregular heart beat, and shortness of breath on exertion. In the extreme phase of the deficiency, muscle wasting, cardiac enlargement and circulatory failure are characteristic.

Vitamin B-1 deficiency may arise either directly as a result of low intake of the vitamin or from disproportionate carbohydrate ingestion. During pregnancy, increased utilization of vitamin B-1 may cause a deficiency which can be aggravated by loss of appetite and vomiting which, in turn, leads to even less food intake. Diseases such as chronic ulcerative colitis and sprue that interfere with absorption may also produce deficiency states, even when dietary intake is adequate.

While severe beriberi is relatively uncommon in the world

today, minor degrees of deficiency that cause listlessness, apprehension, anorexia and fatigue still occur. Manual dexterity may be lost and sufferers become irritable, confused and inattentive to details.

Vitamin B-1 is rapidly and actively absorbed from the small intestine. Within the body it is transformed by phosphorylation with incorporation of two molecules of phosphoric acid to become the active coenzyme, thiamine diphosphate. This reaction can take place in most tissues but is prevalent in liver cells.

Small amounts of the phosphorylated form occur in all animal cells, but the body cannot store significant amounts of the free vitamin. Dephosphorylation can occur in the kidney (and probably other organs), and excess quantities of free vitamin are excreted in urine. Therefore, supplies must be replenished daily. During active diuresis, large amounts of vitamin B-1 can be lost. Smaller amounts are excreted in sweat.

Vitamin B-1 is an important factor in carbohydrate metabolism. It enables pyruvate to enter the Krebs Cycle to produce energy. Without vitamin B-1, there could be no energy production. It aids oxidative decarboxylation reactions (removal of carbon dioxide and carboxyl groups) when pyruvic acid is converted to acetyl coenzyme A in the Krebs Cycle, which is the primary pathway for energy production in the body. It also helps convert blood glucose into biological energy by aiding carbohydrate metabolism.

In deficiencies, blood pyruvate levels rise steeply, and often blood lactate levels as well. It has not yet been determined whether the central nervous system effects of vitamin B-1 deficiency are caused by these high levels, or by other actions.

Vitamin B-1 is necessary for synthesis of acetylcholine in nerve cell membranes, and it helps maintain nerve tissue, nerve function, and nerve impulse transmission. It is required for maintaining the function of muscles, especially the heart. Vitamin B-1 is involved in the conversion of fatty acids into hormones, such as cortisol, testosterone and progesterone, and for converting amino acids into proteins and enzymes.

The U.S. Department of Agriculture estimates that as many as 80 percent of Americans do not ingest adequate amounts of vitamin B-1 in their diet. Chronic dieting and eating highly processed foods are considered to be contributory to the problem. Additionally, cooking destroys vitamin B-1, and since it is water soluble, some is lost to the water used to cook food.

Vitamin B-1 is contained in nearly all foods, but usually in low concentrations. The richest sources are whole grain cereals, brewer's yeast, legumes, nuts and organ meats.

The proven therapeutic use for vitamin B-1 is the prevention and treatment of beriberi and other symptoms of deficiency. Since vitamin B-1 deficiency can be involved in the etiology of peripheral neuritis, it is used to treat neuritis due to other causes. Vitamin B-1 is also used for poor appetite, ulcerative colitis, chronic diarrhea, gastrointestinal disorders, diabetic neuropathy, heart disease, alcoholism, and stress.

The vitamin has been successfully used to prevent Wernicke's encephalopathy, a potentially fatal disorder that occurs in some individuals who consume large amounts of alcohol. Symptoms of this disorder include double vision, mental confusion, muscle weakness and difficulty in walking. Untreated, this can advance to permanent brain damage and memory impairment.

There is a lack of proven evidence of effectiveness for vitamin B-1 when used for maintaining a positive mental attitude, enhancing learning ability, reducing memory loss, increasing energy, repelling insects; and treating canker sores,

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indigestion, vision problems and motion sickness. As can be seen, some of these uses are an extension of symptoms caused by vitamin B-1 deficiency.

The typical dose of vitamin B-1 as a dietary supplement in adults is 1-2 mg per day. For mild deficiency syndromes, the usual dose is 5-30 mg daily. Up to 300 mg daily is used for severe deficiencies.

Vitamin B-2 (riboflavin) was thought to be an essential dietary need as early as 1897 when a water soluble pigment with a peculiar yellow-green fluorescence in milk whey was discovered. It wasn't until 1932, however, that the substance was definitely identified as being a vitamin; and 1935 before it was chemically identified and synthesized.

Vitamin B-2, in its pure form, is a yellow, fluorescent pigment with a slight odor. When excreted, it is the vitamin that gives urine a characteristic bright yellow coloration.

Vitamin B-2 is an essential nutrient for humans and plays a key role in the production of energy. It is the precursor of flavin mononucleotide (riboflavin monophosphate, FMN) and flavin adenine dinucleotide (FAD). FMN and FAD are cofactors for a group of protein enzymes (flavoenzymes).

Flavoenzymes catalyze an extensive range of oxidative and reductive biochemical reactions. They are crucial elements in cellular respiration and many other components of health. In cellular respiration, FAD and FMN act as intermediary hydrogen acceptors in the mitochondrial electron transport chain, taking on hydrogen ions derived from food, and passing electrons on to the cytochrome system. All oxidative metabolism is dependent on an adequate supply of vitamin B-2.

The body's requirement for vitamin B-2 is related not so much to total caloric intake, as it is to body size, metabolic rate, and rate of growth, all of which are related to protein intake. The lower the protein intake, the more vitamin B-2 is excreted and lost. Studies indicate that tissue stores of riboflavin are not maintained when the dietary intake of this vitamin is less than 1 mg daily, and 1.3 mg or more daily is necessary to maintain tissue reserves.

Vitamin B-2 is also part of glutathione reductase, an important enzyme that helps provide antioxidant protection to the eyes and is claimed to reduce the risk for cataract formation. FMN and FAD are involved in fatty acid synthesis, deamination of amino acids, and conversion of pyruvic acid into acetyl coenzyme A. It aids conversion of carbohydrates to adenosine triphosphate (ATP) in the production of energy. Vitamin B-2 is necessary for growth and reproduction and the healthy growth of skin, hair and nails.

Vitamin B-2 deficiency (ariboflavinosis) primarily affects the skin, eyes and mucous membranes. Early symptoms may be nonspecific and related to the oral area or to vision. Soreness and burning of the lips, mouth, and tongue are common complaints. These are usually accompanied by discomfort in eating and swallowing. Telltale symptoms include photophobia, increased tearing, burning and itching of the eyes, visual fatigue, spasms of the eyelids, and loss of visual acuity that cannot be accounted for by refractive error. The sensation of "grittiness" under the eyelids is a common complaint.

Lesions of the lips begin with pallor and maceration at the angles of the lips and facial skin or with dryness, redness, or tissue sloughing along the line of closure of the mouth. Ulceration occurs in severe deficiency. At the angles of the lips and face, transverse ulcers appear, which may extend outward for several centimeters. Lesions at this area of the lips have been designated "cheilosis." Those at angles of the mouth are referred to as "angular stomatitis." There is some dispute about the tongue signs of vitamin B-2 deficiency, particularly in the ability to distinguish between the inflammation (i.e., glossitis) of this deficiency versus that of vitamin B-3 (niacin) deficiency. In the real world, deficiency of vitamin B-2 and vitamin B-3 often coexist.

Dermatitis due to vitamin B-2 deficiency begins most often in the nasolabial fold (the area between the nose and upper lip) and is scaly and oily in character. Similar lesions may appear around the eyes and on the ears. Dermatitis involving dry, itchy, scaly skin (seborrheic dermatitis) and scaling eczema of the face and genitals can occur. In severe, long-term vitamin B-2 deficiency, damage to nerve tissue can cause depression and hysteria.

The eye lesions of ariboflavinosis (decreased vitamin B-2 levels) have been the subject of much investigation that remains a matter of controversy. A characteristic vascularization of the cornea has been described in which layers of capillaries proliferate and extend into the superficial layers of the cornea to form tiers and loops. This tissue is normally devoid of blood vessels and is supplied with nutrition by tears.

Corneal vascularization due to vitamin B-2 deficiency occurs in the entire circumference of the cornea and is nearly always bilateral. It interferes with vision and may lead to corneal opacities.

Vitamin B-2 is heat stable, but because it is water soluble, substantial amounts can be lost when food is cooked in water. Since it exists in the germ and bran of grains, milling and processing of grains result in substantial loss.

The U.S. Department of Agriculture has estimated that nearly 35 percent of Americans obtain less than the daily recommended dietary allowance (RDA) of vitamin B-2. Individuals at greatest risk for vitamin B-2 deficiency are alcoholics, the elderly, and premature infants.

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Untreated persons with hypothyroidism are also at risk, since levothyroxine regulates flavin kinase, which is needed for synthesis of the FAD-containing enzyme, erythrocyte glutathione reductase. Thyroid supplementation corrects this problem.

Vitamin B-2 is absorbed in the upper part of the small intestine and absorption is maximized (approximately four-fold) when taken with food. Its conversion to active coenzymes takes place in most cells of the body, but is especially high in the small intestine, heart, liver and kidney.

The best sources of vitamin B-2 are liver, milk and other dairy products. Moderate amounts are found in meats, green vegetables, eggs, avocados, mushrooms, and fish, especially salmon and tuna.

The proven therapeutic use for vitamin B-2 is the prevention and treatment of ariboflavinosis and other symptoms of deficiency. It is also claimed to be useful in preventing cataracts from forming, anemia, burning feet, and hair loss. Claims are made that it prevents eczema, migraine and cardiac tissue damage following ischemia (e.g., in angina and after a myocardial infarction).

Adult dietary supplement doses for vitamin B-2 range from 1 to 4 mg daily. The adult dose for treating riboflavin deficiency is 5 to 30 mg daily in divided doses.

Continuing Education Quiz "Natural Products: Burdock to B-2" (Knowledge-based CPE) 1. A request for which of the following items signifies that the person is looking for burdock? a. Beggar's buttons c. Jew's myrtle b. Box holly d. Kneeholm 2. An allergic reaction to burdock is LEAST likely to occur in persons hypersensitive to which of the following flowers? a. Chrysanthemums b. Daisies c. Marigolds d. Roses 3. The portions of butcher's broom used in herbal medicine are the rhizomes which refer to the herb's: a. freshly picked stems. b. above ground roots. c. dried leaves. CV. d. blooming flowers. 4. Butcher's broom is claimed to be useful for supportive therapy for all of the following EXCEPT: a. leg cramps. b. peripheral vascular disease. c. anorexia nervosa. d. itching of hemorrhoids. 5. A deficiency of vitamin B-1 is called: a. rickets. b. beriberi. c. scurvy. d. pellagra. 6. The early warning signs of vitamin B-1 deficiency include all of the following EXCEPT: a. anorexia. b. easy fatigue. c. vomiting. d. weight gain. 7. The typical daily dose of vitamin B-1 as a dietary supplement in adults is: a. 1 to 2 mg. c. 25 to 50 mg. b. 10 to 20 mg. d. 50 to 100 mg. 8. Vitamin B-2 is a precursor to which of the following cofactors? a. ACH and NOREPI b. cAMP and cGMP c. FMN and FAD d. SGOT and SLDH 9. A deficiency of vitamin B-2 is called: a. rickets. b. beriberi. c. scurvy. d. ariboflavinosis. 10. Vitamin B-2 deficiency primarily affects all of the following except: a. the eyes. b. heart function. c. mucous membranes. d. the skin.

This course expires on: March 11, 2014 Target audience: Pharmacists and Pharmacy Technicians



The South Dakota State University College of Pharmacy is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education. The Universal Program Identification numbers for this program are: #0063-0000-11-001-H01-P, #0063-0000-11-001-H01-T.

To receive 1.5 Contact Hours (0.15 CEUs of continuing education credit, read the attached article and answer the 10 questions by circling the appropriate letter on the answer form below.

A test score of 70% or better will earn a Statement of Credit for 1.5 Contact Hours (0.15 CEUs) of continuing pharmaceutical education credit. If a score of 70% is not achieved on the first attempt, another answer sheet will be sent for one retest at no additional charge.

Learning Objectives - Pharmacists: 1. Identify claims, mechanisms of action, and typical dosages for Burdock, B-1 and B-2; 2. Select from a list, the synonyms for these products; 3. Describe popular uses of the products discussed; 4. Identify sources for information on natural products.

Learning Objectives – Technicians: 1. Identify the popular uses of Burdock, vitamin B-1 and vitamin B-2; 2. Describe product dosage forms of the products discussed; 3 Identify the condition resulting from B-1 deficiency; 4. Identify the condition resulting from B-2 deficiency.

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Bernard "Bud" Fullenkamp

Bernard "Bud" Fullenkamp, Sioux Falls, SD, formerly of Hudson, SD, died January 30, 2011, at Dougherty Hospice House, Sioux Falls, SD. He was 98.

Grateful for having shared his life are his son, Michael Fullenkamp (Judith), Hartford, SD; daughter, Ann Hesla (Pete), Hudson, SD; six grandchildren, Neili Fullenkamp (Pat Fokken), Vicky Rohl (Eli), Penny Fullenkamp, Emilee Fullenkamp, Amanda Drymalski (Mark), Scott Hesla (Chelsea), John Hesla (Kate); eight great-grandchildren, Gracy and Nolan Rohl, Nora, Nathan and Bennett Drymalski, Celia Fullenkamp, William Hesla, a newborn infant expected on February 12, and Ava Fullenkamp; special nieces, Suzi and Lexi Grote and Ann J. Fullenkamp; and several other nieces and nephews.

In addition to his wife, he was preceded in death by his grandson, Ben Fullenkamp; greatgrandson, Grant Bernard Rohl; brothers, George, Joseph, Frances, James; sisters, Marie, Evelan, Valeria, Dorthy; and his parents.

Norman Dale Muilenburg



08/11/1943 - 02/14/2011

Born in Pipestone, Minn., to Elmer and Frieda Muilenburg, Norm attended South Dakota State University and graduated with a Bachelor of Science in pharmacy in 1966. He entered Peace Corps training in 1967 where he met his future wife, Margie. He served in Ad-

dis Ababa, Ethiopia, as a pharmacy instructor until June 1969.

Upon returning to the U.S., they lived in Minnesota for four years before moving to Portland in 1973. A pharmacist's pharmacist in his role in drug information at Kaiser Permanente for the past 20 years, Norm also worked at Good Samaritan Hospital and Providence St. Vincent's Medical Center. He was recognized in 1979 as Oregon Hospital Pharmacist of the Year.

Norm and Margie are the parents of Andrew and Peter. They delighted in their daughters-in-law, Ali and Tracy; and grand-children, Brady, Lucy, Drew, Sofie and, soon to be, Emma.

Known for his wit; his love of sports, especially baseball, and especially the Dodgers; his love of travel; and his love of Larue.

Norm will be missed not only by his immediate family; but also by his sisters and their families, Marilyn and Stuart Wilson and Myrna and Koos Kryger; three nephews and a niece; motherin-law, Mary Beth Powers; dear friends, John and Judy Jendrzejewski; along with a host of colleagues, neighbors and friends.

Donations may be made to Friends of the National Library of Medicine, 7900 Wisconsin Ave. N.W., Suite 200, Bethesda, MD 20814; or to Kaiser Hospice, 2701 N.W. Vaughn St., Suite 140, Portland, OR 97210.

Willis Hodson

Willis Hodson, 91, passed away, Tuesday, Feb. 22, 2011, at La Posada Nursing Home in Arizona.

In accordance with his wishes, no public services were held. His burial was in Pleasant Hill-Powell Cemetery south of Ipswich.

Willis was the son of Walter and Elizabeth Hodson, born on March 3, 1919. He grew up on the family farm south of Ipswich. He attended and graduated from South Dakota State University. He used his Pharmacy Degree in a lifelong career with Walgreen's Drug Store chain, managing the store in Aberdeen for 35 years.

Upon his retirement, Willis took up a secondary career with the State of South Dakota Medicare Fraud Division. After his second retirement, and having been snowbirds for several years, he and his wife, Darlene, moved permanently to Green Valley, AZ.

Willis was the President of the South Dakota Pharmacists Association 1959-1960.

To Place a Classified Ad in the Journal: Call, write, fax or email the ad to:

South Dakota Pharmacist Classified P.O. Box 518, Pierre, SD 57501 e-mail: sdpha@sdpha.org phone: (605)224-2338 fax: (605)224-1280

Classified Rates

Classified ads are \$25.00 per five line ad/per issue. Additional lines will be billed at \$1.00 per line. Including your company logo will be an extra \$5.00 charge.

CLASSIFIEDS

Roger's Family Pharmacy in Yankton, SD is looking for a FT pharmacist who wants to move up. Join 2 FT pharmacists and experienced techs in a Medicare certified, immunizing community pharmacy. No nights. No Sundays. No holidays. Every other Sat. 9-1. Junior partnership available. Email at rrpharmacy@hotmail.com or call Roger Renner at 605-660-0706.

FOR SALE - 4 Ft. Table Model NU-425-400, Class II, Type A2 Biological Safety Cabinet Features: HEPEX Pressure Duct, Electrical: 115 VAC, 60 HZ, Metal Diffuser, Fluorescent Lighting, Removable Work Tray, Drain Valve, 10" Access Opening, Sliding View Window w/ Window Alarm, (2) Electrical Circuits w/ Circuit Breakers, (2) Duplex Outlets, (1) Petcock (right sidewall), (1) Plugged Coupling (right sidewall), Front Filter Service, Minihelic Gauge, Armrest, IV Bar w/ 6 hooks 4254M262, Base Stand w/ Leg Levelers (36" Work Surf. Ht.) NU-400-109. Still in original packaging. Price is negotiable. Casey Drug & Jewelry, Contact Jim Bregel (605) 680-2868.

SPRING DISTRICT MEETINGS

April 3rd Mitchell District Meeting 6:30 p.m. Blarney's meeting room in the Mitchell Mall. SDPhA Association Update CE available RSVP to Tara Sandoval at <u>tlsandoval@hotmail.com</u>

April 10th Mobridge District Meeting 6:00 p.m. Bob's Steak House in Gettysburg SDPhA Association Update CE available RSVP to Galen Jordre at galen.jordre@state.sd.us

April 14th Sioux Falls District Meeting & SDSU ASP Auction Thursday, April 14th 5:30 p.m. Ramada Inn & Suites (1301 W. Russell St) The annual SDSU Academy of Student Pharmacists fundraising auction will be held immediately following the dinner and meeting. SDPhA Association Update CE available. RSVP by April 11th to amy.heiberger@avera.org

April 28th Black Hills District Meeting 6:00 p.m. Arrowhead Country Club, Banquet Room Speaker: Dr. James Benoist a pain Management IM MD from Denver, Colorado Topic:"Lidoderm, the first-line treatment for PHN and treatment for PHN multimodal therapy" SDPhA update and business meeting will follow. RSVP to Far Fortier at <u>farfortier@hotmail.com</u>

DEA TAKE BACK DAY – APRIL 30TH!

Just a reminder the DEA will again be holding a Take Back Day for medication disposal. I have a limited number of posters available, but the easiest thing to do if you choose to become engaged in this activity will be to download the supporting material at www.nationaltakebackday.com.

The DEA will be coordinating these efforts from 10 a.m. until 2 p.m. on that Saturday. At this time, they would prefer pharmacies work to support law enforcement efforts, as materials will not be specifically be identified. I do encourage pharmacies to hold their own community take-back events with local law enforcement. You and your local law enforcement partner must contact the DEA to receive approval for these types of events, as they commonly involve controlled medications.

For more information, please give me a call at 605-224-2338, or send me an email at sue@sdpha. org.

For a listing of locations currently involved in the DEA's April event, you may visit: www.deadiver-sion.usdoj.gov/drug_disposal/takeback/index.html.

South Dakota Pharmacists Association PO Box 518 Pierre, SD 57501-0518

