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For more information, please call 605.553.5155 or visit CleftPalateClinic.com. Dr. Rif’at Hussain
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I am sure many of you understand that you must select a diagnostic code or codes after you provide a service for a patient in order to get paid for that service. That code is an ICD code.

International Classification of Diseases dates back to 1706 with Francois Bossier de Lacroix. He was the first to classify diseases systematically, and we were off and classifying.

The International Statistical Institute meeting in Vienna in 1891 charged a committee with the preparation of a classification for causes of death, and literally, ICD-1 was born.

During the Fifth International Conference in 1945, it was recognized that the classification of sickness and injury was closely linked with the classification of causes of death. Also at that time, a growing number of statistical organizations were using medical records to study both sickness and death. They noted that a single list greatly facilitated their coding operation. It also provided a common base for comparison of morbidity and mortality statistics. The modern day ICD list was born. It was also at this time that the World Health Organization (WHO) assumed responsibility for the process. The current list (ICD-9) was implemented in 1975. In 1985, work began on ICD-10.

So what is the big deal about ICD-10? There are major differences between ICD-9 and ICD-10. 10 is not just an update of 9. The codes in 10 are up to seven characters compared to five in 9. The codes in 10 are both alpha and numeric compared to either alpha or numeric for 9. There are 13,000 codes in 9 and approximately 68,000 in 10. There is so much more granularity and detail in ICD-10. They will require much more information in documentation to define the code. They may require laterality and many other pieces of information in order to determine the code – there are even codes that would require you to know the type of dog that caused a bite in an injury.

In conclusion, ICD-10 is not just an updated ICD-9 list. This change is set for implementation Oct. 1, 2014, and you will have no choice. If you do not submit information with ICD-10 codes after Oct. 1, 2014, you will not be paid for your work.

Other concerns with implementation of ICD-10 surround whether all software vendors will have the necessary changes available for the October deadline. Software will require much more robust data fields and processes to support the data exchange.

Our American Medical Association (AMA) has been working to delay implementation, and they were able to push back implementation by one year. It doesn’t look like it will be delayed any further, as many organizations and medical groups have expended resources and dollars to prepare. Some have advocated waiting until ICD-11 is available. ICD-11 is in the development stages.

I would urge you to become knowledgeable and begin to ask questions about your plans for the switch. We are less than one year away from implementation of this significant change to your practice.

On a sadder note, Dr. Rich Sample died on Aug. 24. Rich was a long time family doctor in Madison. Rich was given the honor of 2013 Family Doctor of the Year by the South Dakota Academy of Family Physicians in February. Rich will be missed, and our thoughts go out to his family.

**Book Recommendations**

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*Team of Rivals* by Doris Kearns Goodwin  
*The Creative Destruction of Medicine* by Eric Topol, MD
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I spent the first week of September with my mother in a Sioux Falls hospital. How lucky we are to have all those specialists in such a wonderful facility! And how lucky for my family that she had access to a terrific critical access hospital and 24-hour emergency service in our little town of Miller. Mom's end result might have been very different if we had not had these wonderful health care options. She is safely (and happily) tucked into a swing bed in the Miller hospital today while we assess her long-term care needs.

But what about tomorrow? How are we going to provide the future physicians needed in our South Dakota towns and cities? The Wall Street Journal's "The Experts" column on June 19 quotes Bob Wachter, immediate past chair of the American Board of Internal Medicine: "There are plenty of psychiatrists and cardiologists in New York and San Francisco, but nowhere near enough primary care doctors virtually everywhere." According to Gov. Daugaard's Primary Care Task Force, 53 of South Dakota's 66 counties are designated as health professional shortage areas. While there are clusters of physicians around Sioux Falls, Rapid City and Aberdeen, the more rural counties in our state suffer shortages. Medical leaders in both North Dakota and South Dakota believe each state is short at least 100 physicians.

The option to expand Medicaid in our state has created more concern. An aging population in South Dakota will further stress our caregiver numbers. And the number of people who may participate in the Patient Protection and Affordable Care Act (ACA) has created fear that the health care system will simply be overwhelmed.

South Dakota is already trying to address some of these issues. The Frontier and Rural Medicine (FARM) program sends third-year medical students into rural health care settings hoping they will make a connection and consider choosing this type of practice. The South Dakota Department of Health offers a grant to physicians who sign a three-year contract to practice in a rural community. Our larger health care systems are providing new technologies which give online access to specialists who can support decisions made by primary care physicians in rural areas. Careful and thoughtful use of qualified mid-level non-physician providers can ease the workload of rural physicians. Somehow, physician payment disparities must be addressed. One way to improve the number of primary care physicians in this country would be to equalize compensation across medical disciplines. Perhaps the South Dakota Legislature will consider supporting an increase in the number of medical students per class, as our neighbor to the north has done. Any of these ideas might make the primary care field more attractive to new physicians coming out of training with a crushing debt load.

We as Alliance members can provide a support group and circle of understanding friends for spouses of new and/or beginning physicians. Our activities introduce spouses to the larger community as well. We can also educate ourselves and provide programs to educate others about the issues we support as we strive to make our health care system better. Finally, as the 2014 election approaches, we can educate ourselves about local, state and national candidates and get out and vote! Learn the positions of the South Dakota State Medical Association and American Medical Association on health care issues. Find out where candidates stand. Reach out to your local legislators and contact them with explanations of why the medical community thinks as it does. It might help them see these issues in a whole new light – and it certainly can’t hurt!

In last month’s column, the South Dakota Alliance was described as the oldest, continuous women’s auxiliary in the nation, despite the fact that another state had organized an auxiliary in 1907. Even though that state, Oklahoma, disbanded for 11 years, it is still recognized as the oldest medical auxiliary in the country. Our South Dakota Alliance membership was divided into districts in 1923, and by 1929, 10 districts had been organized. What do you think our membership was in 1929? Thirty? Fifty? Seventy-five? As usual, collecting dues was a problem! See if you can find out where our membership stood almost 85 years ago.
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Let’s take a step back. Suppose for a moment that you could design an entirely new health care system for the United States. All politics aside, would you be likely to re-create the current system? Obvious problems include poor outcomes for several key health indicators despite high expenditures. Added to this is the issue of medical bankruptcy, as highlighted by Dulitz in the current issue.

In the Dulitz study, we see the trade-offs that are made by hard working South Dakota farmers to balance cost and benefits within an incredibly complicated health care system. Fortunately, working farmers are likely to be healthier as a group than the general population, and respondents had a high rate of insurance coverage. Yet, almost two-thirds of respondents reported making sacrifices to pay medical expenses and many of those with off-farm jobs would have quit if insurance was otherwise affordable. Although the sample was smaller, younger workers likely to be in child-bearing years were most likely to opt for higher deductibles, lower benefits and delayed care. Farmers with better health also had less insurance coverage, leading one to wonder whether people are attempting to balance their need for coverage with the perceived risk of future illnesses. This is a risky venture at best.

Many respondents worried that a serious illness could cause financial ruin and put their farms at risk. Their concern would appear to be justified: medical expenses have long been recognized as a major cause of bankruptcy in the United States. In 2007, Himmelstein et al. surveyed 1,032 bankruptcy filers and found that 62.1 percent were medical bankruptcies. Moreover, persons with medical bankruptcy were likely to be educated people from the middle class, with two-thirds having health insurance. Others have challenged the impact of medical costs on bankruptcy, citing studies of court records that found that medical debt was not a major cause of bankruptcy. These disparate results derive from the different methodologies used in the studies. Specifically, court records only record debt that is directly owed to a medical provider or facility. Many filers paid their medical bills with credit cards or delayed paying mortgage debt to pay cash for the medical debt. Thus, court records alone paint an incomplete picture of the medical causes of bankruptcy.

Given this situation, few would elect to re-create the current United States health care system. A cogent question is whether current efforts at health care reform will have a significant effect on medical bankruptcy. Certainly, the Affordable Care Act (ACA) will extend insurance coverage to a larger number of individuals. Yet, insurance alone did not save people from medical bankruptcy in the Himmelstein study. Very early data from Massachusetts in 2009 showed that medical bankruptcies had not decreased significantly since the 2008 implementation of universal health coverage. Many of these bankruptcies may have been well under way before reform. However, it seems that the mere presence of insurance alone may not reduce the risk of medical bankruptcy.

Other provisions of health care reform, such as the inability of insurers to cancel coverage when a person gets ill, subsidies to keep insurance costs under control for lower income persons, and the increased ability to get insurance despite pre-existing conditions may have more effect. Although much concern remains, it is possible that the next generation of farmers will not have to worry about losing their land and livelihood as a result of medical expenses.

**REFERENCES**

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Hesham Elgouhafi, MD
Department of Internal Medicine
USD Sanford School of Medicine

Recipient of the 2012-2013
Department of Internal Medicine Service Award

Dr. Elgouhafi was born in Egypt where he also graduated from
the Faculty of Medicine Elmansoura University. He is an
Associate Professor of Medicine and has been a faculty
member for five years. Dr. Elgouhafi serves on the Health and
Public Policy Committee of the South Dakota Chapter of the
American College of Physicians, on the Faculty
Development and Research Committees of the University of
South Dakota Sanford School of Medicine, and the Clinical
Appointment Committee for the Department of Internal
Medicine where he also is a Research Mentor and Grand
 Rounds speaker. Finally, he serves as the Medical Director
for the Avera Center for Liver Disease. He is affiliated with
Avera Hepatology Clinic, Sioux Falls.

“Dr. Elgouhafi has been a reliable, passionate teacher for
our medical students and residents. He regularly teaches
in our Clinical Friday sessions where he observes the
students first and then provides informative feedback to
improve their performance. He is an academic leader for
medical education.”

LuAnn Eidsness, MD, FACP
Professor and Chair, Internal Medicine
In the article titled “Betting the Farm: Health Coverage, Behaviors and Concerns among South Dakota Farmers,” the authors discuss issues related to the health care of farm families – from lack of convenient access, to the personal financial impact of associated costs. The latter may manifest as families forgoing health insurance, neglecting preventive care, delaying care for illnesses, and not taking prescribed medications. This is a source of considerable concern for our mostly rural state.

Agriculture is South Dakota’s No. 1 industry with an annual economic impact of $20.9 billion. While generating 20 percent of the state’s economic activity, production agriculture and its value added industries employ more than 80,000 South Dakotans. Although there is no denying an urban migration affecting our state and rural America at large, 98 percent of the 31,800 farms in South Dakota are family owned and operated. More than 2,500 South Dakota farms have been in the same family for over 100 years.¹

Obviously, the health of South Dakota agriculture producers is important to the state of South Dakota. However, there exists an ongoing shortage of primary care physicians in the state and particularly in rural areas. This is not anticipated to improve as the existing physician workforce is aging and nearing retirement. This is compounded by medical students either choosing non-primary care specialties or gravitating toward larger cities to practice. Furthermore, the statistics indicate that rural residents are often older, less insured, and less likely to seek medical care. The Affordable Care Act (ACA) will allow access to health insurance to many who could not previously obtain it. But, will there be physicians available to care for these rural residents?

Sanford School of Medicine of the University of South Dakota (SSOM) has developed the Frontier And Rural Medicine (FARM) program to help address this problem. The FARM program is a unique opportunity for a select group of third-year medical students to obtain nine months of their clinical training in rural communities. The ultimate goal of the program is to increase the number of primary care physicians who practice in rural South Dakota. Comprehensive medical student rural programs have demonstrated that graduates of such programs are much more likely to enter primary care specialties and practice in rural areas.²⁴

The SSOM has long been recognized for excellence in rural medical education. In 2013, U.S. News and World Report ranked the school ninth among US medical schools in rural medicine. Four-week experiences in rural medicine during the second and fourth years of medical school have been required curricular elements for many years. Building upon this tradition, and with the support of the South Dakota Board of Regents and Gov. Dennis Daugaard, the South Dakota State Legislature approved an expansion in the school’s class size in the 2012 legislative session for the purpose of establishing the rural track program. Each year, up to six students who have already matriculated into the SSOM will be selected through a competitive secondary application process to participate in the program (one to two per site). The first group of students, selected in January of this year, will arrive in the FARM communities in July 2014. The inaugural communities are Milbank, Mobridge, Parkston, Platte and Winner.

At their rural clinical sites, students will participate in the full spectrum of the practice of rural medicine as they provide supervised care and follow patients and their families over time in clinic, hospital and extended care settings. Training in rural communities offers medical students the opportunity to experience increased hands-on education, gain an appreciation of the benefits of continuity in patient care, and develop strong bonds with instructors who mentor students on the professional and personal aspects of being a physician. Students will gain an understanding of the rewards and challenges of rural practice while living, learning and becoming engaged in their
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communities. They will not only be assisting in the provision of health care services but in community health education and will complete a community project as a part of the curriculum with the support of the South Dakota Area Health Education Center.

Learning will be enhanced through specialty clinics on-site, academic faculty visits, online cases, telemedicine and video conferencing. FARM instructors are provided faculty development opportunities to enhance their teaching skills. Community ambassadors will assist in introducing students to and engaging students in their communities.

National studies have demonstrated that students trained in rural track programs, like FARM, perform at least as well as traditionally trained students on standardized and clinical skills testing. With knowledge of this and of the historical effectiveness of similar programs, we look with anticipation to the success of FARM in helping to alleviate the crisis in rural primary care in South Dakota. The timing seems particularly important given the major national initiatives in health care reform.

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H. Bruce Vogt, MD, FAAFP, Professor and Chair, Department of Family Medicine; Program Director, South Dakota Area Health Education Center, Sanford School of Medicine of the University of South Dakota; Medical Director, Physician Assistant Studies Program, University of South Dakota School of Health Sciences.
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Betting the Farm: Health Coverage, Behaviors and Concerns Among South Dakota Farmers

By Michael Dulitz and Susan L. Schrader, PhD

Introduction: This research investigates the health and health insurance status of South Dakota farmers before the onset of the Affordable Care Act of 2010 (ACA) health insurance mandate set to begin Jan. 1, 2014.

Methods: After Institutional Review Board (IRB) approval, surveys were sent to 1,400 randomly selected rural addresses in nine South Dakota counties. The surveys used both qualitative and quantitative means to inquire about the health usage, status and insurance status. Quantitative data were analyzed using Statistical Package for the Social Sciences (SPSS), and qualitative data were analyzed for thematic content.

Results: With an overall return of 205 surveys (135 farmers), the rate of insurance was 90.6 percent. Four-fifths of farmers (80.2 percent) reported having an established provider, and 84.6 percent reported visiting a provider in the past year. Those with non-group insurance coverage were significantly more likely to report using high deductibles and limiting insurance use due to cost, but maintained a high self-reported health and preventative care use. Farmers under 50 had significantly higher rates of decreasing usage and increasing deductibles in order to afford coverage. Farmers over 65 had high health care utilization. Farmers ages 51-64 had both a high rate of using strategies to cut cost along with having an increasing utilization of care. Qualitative themes included concerns about obtaining health insurance, high deductibles and lack of coverage.

Conclusions: The health insurance and usage among farmers is high. Farmers ages 51-64 experience increased burden due to increasing health care needs along with need for health insurance coverage. Respondent comments suggest concern with increasing rates and financial loss.

Introduction
The difficulties of accessing the health insurance system in the United States have been well detailed in the media in the wake of the current health care debate. One group often cited as having difficulty accessing health care is farmers. Farmers are unique due to their self-employed status, fragile income, high assets, high debts and occupational risk. These characteristics challenge farmers as they shop for health insurance policies and seek health services. The costs associated with health care can have a vital impact on the economic security and ultimately, the viability of the farm. This is especially the case for family farms that often rely on family members for labor.

The impact of the difficulties farmers face in accessing insurance extends deep into the community. Farms are a vital part South Dakota’s rural economy. Furthermore, family farms make up a significant portion of farming operations in South Dakota. Farmers affect the health care system in South Dakota as well. Farmers and their families constitute a significant portion of the clientele of many rural practices in South Dakota. Given the unique characteristics of farming, lack of insurance may lead to delays in seeking care or a health crisis. These issues have a direct impact on the viability of the rural health care system and become compelling reasons for research about farmers, health care coverage, behaviors and concerns.

A review of the pertinent literature revealed few studies addressing these issues. Research on health coverage and behaviors has been pursued through nationwide economic panel studies,1-3 small regional surveys,4-5 and state...
specific public policy reports. Of note, the Access Project, a public policy project funded by the Robert Wood Johnson Foundation, did a survey in 2007 that included South Dakota specific data about farmers. For South Dakota, its health professionals, and its farmers, more information is needed to understand health coverage, behaviors, and concerns. This is essential with the coming of the insurance mandate of the Affordable Care Act of 2010 (ACA) due to the potential influx of newly insured patients seeking and possibly catching up with previously delayed care.

Overall, this research seeks to answer the question, “What are the health coverage, behaviors and concerns among South Dakota farmers in 2012?” Thus, this study has multiple objectives. First, we will investigate the health insurance status among farmers including the source of their insurance. Second, we will examine the health status and use of health services among farmers and their families. Finally, the specific concerns of farmers will be examined through thematic analysis of open-ended comments.

Methods
This study examined the health coverage, behaviors and concerns among farmers in South Dakota. A three-page, 15 minute survey was developed using elements of existing surveys, along with an open-ended question to invite individual narrative of respondents’ experiences. A sample size of 1,400 farmers from nine South Dakota counties was chosen based on grant funding, this represented an oversampling based on a 95 percent confidence level plus or minus 3 percent of 857. Individuals were selected by utilizing a Microsoft Excel random number generator to create a simple random sample from 4,345 rural addresses. These addresses were acquired from the plat and directory maps of Bon Homme, Clay, Davison, Day, Edmunds, Haakon, Hanson, Jackson and McPherson counties. A judgmental sample of counties was drawn based on factors such as region, number of farms, percent of farmers that work off the farm, percent of farmers over age 65, percent with sales over $10,000 and directory availability. These counties had a combined population of 60,977 people and 3,840 farms. The use of rural addresses presented the problem of reaching non-farmers living on acreages or other rural properties. These non-farmers were welcomed to return the survey, but their data were analyzed separately. For the purposes of this study, a farmer was defined as any individual who produces or helps to produce a crop or raises livestock for the intent of sale to others. It was believed that there would be a high rate of uninsured farmers and, of those with coverage, most would rely on one member of the family working off the farm to afford coverage through group based health insurance policies. It was also believed that high deductibles and delaying care would be used among those with health insurance in order to keep costs low.

Upon Augustana College Institutional Review Board (IRB) approval and receipt of funding, a cover letter, questionnaire, drawing entry card and a postage paid envelope were sent in a single mailing to the selected addresses in August 2012. In order to enhance return rate, respondents were invited to enter a drawing for two $100 Visa gift cards. A two-part mailer was utilized so that drawing entries with identifiable information were separated from surveys, therefore assuring the anonymity of respondents’ data.

Upon return of surveys, undergraduate research methods students and work study assistants entered quantitative data into the Statistical Package for the Social Sciences

<table>
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<td>73</td>
<td>64.6</td>
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*n values varied due to exclusion of subjects with missing data.
Data were cleaned by random audit, frequency tables and use of SPSS data verification tools. Qualitative data were transcribed into an electronic document and analyzed for emergent themes. Missing data were omitted from data analysis.

**Results**

Data from 135 farmers were analyzed for this study, a return rate of 14.5 percent. Table 1 presents the demographics of the sample. The farmers represented an aging group with 46.5 percent between the ages of 51 and 64 with an average age of 58.4 years. Most (85.7 percent) farmers were married, and the average household size was 2.6 individuals. The average hours worked per week on farming activities was 53.7 for farmers, and 29 for spouses. One-fifth (19.3 percent) of farmers reported employing non-family workers on the farm. The health insurance rate was high among the sample with 90.6 percent of the heads of farming households reporting having coverage.

The use of health services was high among farmers (Table 2) with 84.6 percent reporting visiting a provider within the past year. Having a primary care provider was indicated by 86.2 percent of respondents and 71 percent of farmers reported having a regular physical in the past year. Half (50.4 percent) of farmers reported getting a flu vaccination in the past year. Mechanisms for coping with the cost of health care varied (Table 2). Two main mechanisms used were either reducing use habits or modifying health insurance benefits. Usage modifications included waiting longer for an office visit (53.5 percent), forgoing an office visit (29.1 percent), not scheduling tests recommended by a physician (14 percent), and not filling or cutting back prescribed medications (6.5 percent and 4.2 percent, respectively). Benefit modifications included switching to higher deductibles (44.4 percent), switching to a plan with fewer benefits (23.8 percent), or minimizing use (22 percent).

In 26.8 percent of cases, the farmer or the spouse worked off the farm primarily in order to afford coverage. When asked, over half (53.8 percent) of these individuals would quit off-the-farm employment if health insurance could be obtained at the rate they pay now. One-fifth (21 percent) of farmers reported making major sacrifices to afford out-of-pocket health care costs while 41 percent report making minor sacrifices. Nearly one-third of farmers (32 percent) reported making no sacrifice due to costs.

Bivariate analysis was conducted with health behaviors and outcomes based on type of health coverage and age. Type of health care coverage was dichotomized as group (employer provided or government sourced) versus non-group (privately purchased policies) insurance coverage (Table 3). Statistically significant results are reported. Those with non-group health insurance coverage self-reported a higher rate of “excellent” or “very good” health,

<table>
<thead>
<tr>
<th>Table 2. Measures Taken to Help Control Health Insurance Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Method</strong></td>
</tr>
<tr>
<td>Saw their doctor for routine care or a minor illness in the past year</td>
</tr>
<tr>
<td>Established or maintained a relationship with a primary care provider</td>
</tr>
<tr>
<td>Had a regular physical</td>
</tr>
<tr>
<td>Made sacrifices due to out-of-pocket health care costs</td>
</tr>
<tr>
<td>Waited longer to see a doctor when sick with hopes to get better on your own</td>
</tr>
<tr>
<td>Had a flu vaccination</td>
</tr>
<tr>
<td>Switched health insurance to a plan with higher deductibles in order to save money</td>
</tr>
<tr>
<td>Primary reason for self or spouse’s off-farm employment was health insurance</td>
</tr>
<tr>
<td>Decided not to go to the doctor when you felt you needed to because of cost</td>
</tr>
<tr>
<td>If health insurance was affordable by only farming, would quit off farm employment</td>
</tr>
<tr>
<td>Switched health insurance to a plan with fewer benefits to save money</td>
</tr>
<tr>
<td>Minimized how often health insurance was used in order to keep the overall cost down</td>
</tr>
<tr>
<td>Not scheduled tests your doctor has suggested in order to save on cost</td>
</tr>
<tr>
<td>Decided not to fill prescriptions given to you by your doctor because of cost</td>
</tr>
<tr>
<td>Stopped taking medication to avoid the cost of prescription medications</td>
</tr>
<tr>
<td>Cut back the dose of prescription drugs to help make the medication last longer</td>
</tr>
</tbody>
</table>
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but they also reported higher rates of increasing deductibles and avoiding the use of health insurance in order to manage costs. Those with group coverage had a lower rate of avoiding the use of health insurance and utilizing increased deductibles to manage cost. Those with group insurance not only reported a higher rate of pre-existing illnesses, but also a higher rate of managing disease risk factors. Those with group coverage also had a higher rate of working off-farm for coverage and a higher rate of desiring to leave this off-farm employment if insurance was affordable.

In examining the effects of farmer age on health behaviors and outcomes, those under age 65 had higher rates of increasing deductibles and not visiting a doctor when sick in order to decrease costs, with those under age 50 reporting a higher rate of cutting health insurance benefits due to cost. With a rate approaching significance, those under age 50 were less likely to have a primary care provider. Farmers under age 65 reported a higher rate of self-reported sacrifice due to health care costs, yet rated their health as “excellent” or “very good” at a higher rate. Those over age 65 had higher rates of managing pre-existing illnesses, receiving physicals and having preventative screenings.

The open-ended question was analyzed for emergent themes from all 235 respondents (farmers and rural, non-farming residents) (Table 4). Of the 69 comments, the most common theme was costs and complications with health insurance (28 comments). Other adverse themes and the frequency in which they were cited included increasing deductibles (eight comments), difficulties due to pre-existing conditions (seven comments), fear of loss of assets (five comments), and concerns about ACA (two comments). Favorable comments included satisfaction with Medicare (12 comments), no problems with maintaining coverage (eight comments), quality of health care in South Dakota (four comments), and using alternative methods to cover health care expenses (three comments).

**Discussion**

The data provided many interesting insights into the status of rural farmers. The relatively low uninsured rate and the low number of individuals working off the farm
strictly for insurance coverage did not support the central hypothesis of this study.

While the return rate was modest (14.5 percent), these data are reflective of the 2007 Access Project survey of farmers (n=307) where a larger sample of South Dakota farmers was used.\(^6\) When compared to that research, this study’s respondents were similar in health insurance rates (90 percent vs. 90.4 percent), health status as “excellent” or “very good” (58 percent vs. 52.7 percent), and use of insurance from a group market (50 percent vs. 47.1 percent). This similarity in results helps to validate this study, and taken together they offer a longitudinal perspective on health coverage and usage among South Dakota farmers.

The health of the farmers in this study showed many positive aspects. Farmers across all ages and insurance statuses had a high rate of having an established primary care provider. Further, farmers reported a high rate of disease management and prevention. These rates varied significantly by type of insurance and age; thus, if health care becomes mandatory and affordable for more groups after Jan. 1, 2014, more farmers may seek preventative care and may engage in more compliant behavior. Furthermore, for those without insurance or currently possessing non-group coverage, expanding preventative care benefits under ACA may increase health care utilization.

Age played a large factor in many health-related behaviors. While it is commonplace to have increased health needs
over the life course, “baby boomers” (age 51-64) have difficulties both in obtaining and affording health insurance coverage along with the burden of managing increasing health care needs. This in effect creates a potentially unstable situation as farmers approach retirement age. This may lead to decreased use of health care resources despite perceived need for care. Deferral of care until Medicare age, and the subsequent costs of catching up with health care needs are potential results. With the majority of respondents within the 51-64 age group, this increase in health care need despite the reliance on private insurance adds extra burdens on farmers. While younger respondents in most cases did not face the increased health care needs that older groups faced, the increases in cost for health insurance were cited in many comments as a strain on the household budget.

There are several limitations in this study. Only nine counties in South Dakota were sampled, so generalizing to the entire state is not recommended. The survey was sent to rural addresses including non-farmers living on acreages. This limited the number of true farmers reached with the 1,400 surveys mailed. Although the random selection of rural addresses seemed to be the least biased way of accessing farmers, it did introduce the difficulty of screening out those who did not actually farm, thereby reducing the sample return rate. Income and financial data would have been desirable; however, the researcher’s lived experience in farming communities suggested that this was a sensitive issue and could trigger a non-response. Last, since the sample of 135 individuals out of 1,400 surveys was small, some may question whether respondents differed significantly from non-respondents. However, some confidence in similarities among these groups can be drawn based on the comparison patterns reported in the Access study.6

This study also brings up new avenues for further research on this topic. Foremost, a larger study could provide more comprehensive data for the entire state. A follow-up study post implementation of the insurance mandate of the ACA would help to determine the impact that this mandate has on South Dakota farmers. Also, further study into the financial impact of maintaining health insurance and utilizing the health care system would provide better insight into how farmers behave as consumers in the health care system. Finally, further research may be indicated among other groups, such as small business owners and the self-employed, where non-group health insurance coverage is commonplace.

Ultimately, the impact of maintaining health insurance and accessing medical care is a significant burden for farmers. Without access to group insurance policies, farmers buying non-group policies face significant cost in obtaining these policies, leading to increased deductibles and reduced usage. In order to provide better care for these groups, alternatives for care and coverage could be explored to improve access. Health insurance cooperatives, targeted health insurance plans, and direct care practices are options that could be explored for providing coverage to help ensure access and care without delaying due to cost.

This study has shown the impact of health insurance coverage and usage among South Dakota farmers. Maintaining health insurance is a challenge for farmers, especially those ages 51-64. Despite the high rates of health insurance coverage, decisions about coverage, health care behaviors, and catastrophic illness make many feel they are “betting the farm” against unexpected catastrophic illness or injury. Armed with this knowledge, progress can be made toward improving care and coverage for this population that is so vital to the South Dakota economy. As we move forward, we will see how health care reforms will impact this population by hopefully improving the health of our farm families and ultimately, increasing the viability of the farm.

**Acknowledgements**

These data were presented in poster form at the Midwest Sociological Society Annual Meeting in Chicago in March 2013 and as a paper at the Augustana College Symposium in April 2013.

Grant funding was received from the Augustana College Academic Affairs and Sociology departments. Further support was received from County-Wide Directories, Larchwood, Iowa, and the Augustana College Research and Scholarly Activities Committee.

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2. Mishra AK, El-Osta HS, Ahearn MC. Health care expenditures of self-employed farm households in the United States. Agric Econ. 2012;43:75-88. Please note: Due to limited space, we are unable to list all references. You may contact South Dakota Medicine at 605.336.1965 for a complete listing.

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Susan L. Schrader, Professor and Chair of Sociology, Department of Sociology, Augustana College, Sioux Falls.
Medicare Charge-Receipt Data: Results for South Dakota

By Randall Lamfers, MD, Nathan Miller, MD; and Mary D. Nettleman, MD, MS, MACP

Abstract

Background: The 2013 release of 2011 financial information by the Centers for Medicare and Medicaid Services (CMS) caused concern because some hospitals had charges that appeared to be exorbitantly high compared to reimbursement rates.

Methods: Charges and receipts for South Dakota were compared to national data. The study was restricted to nine discharge codes likely to be seen by an adult hospitalist service.

Results: South Dakota hospitals had a lower charge-to-receipt ratio than the national average (p<0.01). The average ratio in South Dakota was 2.74 compared to 3.75 nationally. South Dakota charged 29 percent less for these discharge codes and received 3 percent lower reimbursement than the national average.

Conclusions: The relatively low charge-to-receipt ratio and low charges in South Dakota are encouraging. Unfortunately, the only South Dakotans likely to be asked to pay full charges are the uninsured, who thus face bills that are much higher than insurance companies pay for the insured population. This leaves uninsured patients and hospitals with trying to negotiate discounts or waivers on an individual basis, which is an inefficient and problematic approach for both parties.

Introduction

Paying for our nation’s health care expenditures is an expensive endeavor, consuming 18 percent of our nation’s GDP.1 The Centers for Medicare and Medicaid Services (CMS) recently published data outlining both charges submitted and compensation received for the 100 most common procedures/diagnoses billed by hospitals. Data were submitted by 3,337 hospitals, representing 60 percent of all charges submitted by Medicare in 2011.2-4 Hospitals that completed more than 11 discharges specific to the diagnosis-related group (DRG) of interest were included in the Medicare data.

The purpose of this article is to analyze charge/reimbursement ratios of hospitals within South Dakota to determine if they vary significantly from the national average. In order to simplify the comparison, only charges pertaining to DRGs without complications or major complications were reviewed, and diagnoses were confined to those commonly seen by hospitalists.

Methods

Data on inpatient Medicare charges and reimbursements were downloaded from the public use database.7 These data include hospital-specific charges for the top 100 most commonly billed discharge diagnoses for fiscal year 2011. Diagnoses are provided using the Medicare Severity Diagnosis Related Group (MS-DRG). Charges were set by individual hospitals and submitted to Medicare. Payment included the MS-DRG amount, total bill per diem, beneficiary primary payer claim payment amount, beneficiary Part A coinsurance amount, beneficiary deductible amount and DRG outlier amount.

For the current analysis, data were abstracted for nine common adult diagnoses likely to be seen by a hospitalist. The MS-DRG code selected was specific for a condition without complications/comorbidities or major complications/comorbidities, with the exception of transient ischemia which had only a single code available. Charge-to-payment ratios were calculated for each of the nine diagnoses for hospitals in South Dakota and compared to
national data for the same codes.

**Results**

Charge-to-payment ratios for South Dakota hospitals were consistently below the national average (Table 1, p<0.01 using paired t-test). The lower ratio was largely due to lower charges being submitted by South Dakota hospitals compared to national charges. On average, South Dakota hospitals charged 29 percent less for these MS-DRG discharge codes and also received 3 percent lower reimbursement than the national average. The average ratio for these discharge codes was 2.74 for South Dakota and 3.75 for the nation.

**Discussion**

The release of the Medicare data in May of 2013 caused significant public concern about what appeared to be exorbitant charges by some hospitals and wide variation in charge-to-payment ratios.\(^2\)\(^5\) For the nine diagnoses reviewed, our results show South Dakota hospitals’ charge-to-payment ratios were significantly lower than the national average. In turn, the lower ratio was driven by South Dakota charges, which were 29 percent lower than hospitals nationwide for these same DRG codes. In this regard, South Dakota hospitals can be considered good stewards of the public trust.

This study highlights the problems with the current system of setting charges. Clearly, the population most directly affected by high charges is the uninsured. Although hospitals may sometimes discount the full charge to patients without insurance, this is a voluntary system that is applied on a case-by-case basis. The result is a system that works poorly for both hospitals and patients. Patients are burdened with negotiating a system that is hard to understand and bills that are dauntingly high. Hospitals collect only a small percentage of billed charges from their uninsured population.\(^4\) It is important to note the charges discussed in our paper were for common, uncomplicated diagnoses that might be managed by a hospitalist. These diagnoses are not elective or scheduled, and therefore, the uninsured patient would not have the opportunity to shop around for the best charge prior to admission.

There are reasons why a hospital might want to set charges significantly higher than their Medicare reimbursement rate. In some cases, the higher rate might be set to negotiate reimbursement with third-party insurance carriers other than Medicare. Hospitals with higher charges also cited their case complexity, teaching hospital status, and percentage of uninsured patients as reasons why they had higher expenses and thus had to charge higher prices to third-party payers.\(^4\)\(^5\) Yet, the average charge-to-payment ratio for these discharge codes was 3.75 nationally and 2.74 in for South Dakota. It is unlikely private insurers are paying double, triple or quadruple Medicare rates.

In conclusion, South Dakota hospitals had more moderate charge-to-payment ratios than the national average. However, the ratio was still high enough to create a potential burden for uninsured patients.

<table>
<thead>
<tr>
<th>MS-DRG</th>
<th>National</th>
<th>South Dakota*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transient ischemia</td>
<td>4.30</td>
<td>2.76</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease w/o CC/MCC</td>
<td>3.67</td>
<td>2.45</td>
</tr>
<tr>
<td>Simple pneumonia and pleurisy w/o CC/MCC</td>
<td>3.74</td>
<td>2.52</td>
</tr>
<tr>
<td>G.I. hemorrhage w/o CC/MCC</td>
<td>3.77</td>
<td>2.53</td>
</tr>
<tr>
<td>Esophagitis, gastroenteritis and miscellaneous digestive disorders w/o MCC</td>
<td>3.99</td>
<td>3.01</td>
</tr>
<tr>
<td>Cellulitis w/o MCC</td>
<td>3.44</td>
<td>2.80</td>
</tr>
<tr>
<td>Miscellaneous disorders of nutrition, metabolism, fluids, electrolytes w/o MCC</td>
<td>3.66</td>
<td>2.77</td>
</tr>
<tr>
<td>Kidney and urinary tract infections w/o MCC</td>
<td>3.67</td>
<td>2.74</td>
</tr>
<tr>
<td>Septicemia or severe sepsis w/o mechanical ventilation/MCC</td>
<td>3.55</td>
<td>3.04</td>
</tr>
</tbody>
</table>

\(^{CC} = \text{complications/comorbidities}; \ MCC = \text{major complications/comorbidities.} \)

\(^{*} p<0.01 \text{ for all diagnosis codes.} \)

### REFERENCES


Please note: Due to limited space, we are unable to list all references. You may contact South Dakota Medicine at 605.336.1965 for a complete listing.

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* QuitLine participants who have used the service more than three times qualify for free dual medicine combinations of NRT patch + Bupropion or NRT patch + (gum OR lozenges), subject to a physician’s opinion that such treatment is warranted.
Introduction

The Regional Infant and Child Mortality Review Committee (RICMRC) was established in 1997 with the aim of examining deaths of infants and children to identify preventive strategies that may decrease the risk of loss of young life in Minnehaha County. The Committee’s mission is “to review infant and child deaths so that information can be transformed into action to protect young life.” The Committee now serves Minnehaha, Lincoln, Turner, McCook, Lake, Moody, Union, Hanson, Miner and Brookings counties.

The Committee is chaired by the Sioux Falls Fire Department chief and is composed of professionals representing expertise in pediatrics, medico-legal death investigations, nursing, law enforcement, child protective services, emergency medical services and mental health. Sherriff and police departments from the participating counties are invited to be present for the reviews of deaths of children occurring in their counties. To operationalize its goal of preventing death of infants and children in the region, the population of reviewed deaths is defined by these criteria:

- Children under the age of 18 dying subsequent to hospital discharge following delivery (or who were not delivered in a hospital).
- Children who either die in Minnehaha, Lincoln, Turner, McCook, Lake, Moody, Union, Hanson, Miner and Brookings counties from causes sustained in those respective counties, or who died elsewhere from causes sustained in the ten county region.

Eighty-six deaths occurred in the 10-county review area in 2012 (81 in Minnehaha, two in Brookings, and one each in McCook, Moody and Union counties). For illustrative purposes, the age distribution of all childhood deaths of Minnehaha County residents (who represent 94 percent of the total deaths in the 10 county RICMRC review area) is
presented in Table 1. Of important to the interpretation of the data presented in Table 1 is that in 2012, 36 percent of the Minnehaha County resident deaths of children under the age of 18 occurred in the first 28 days of life (neonatal) and some of these occurred within hours of birth. Noted in Table 1 is how the population of Minnehaha County has grown by almost 30 percent between 1990 and 2012. Over this span of time, there has been year to year variation in the number of infant and child deaths in the county. A comparison of the mean number of deaths for the 11-year intervals of 1991 to 2001 and 2002 to 2012 shows a slight decrease. The mean number of annual deaths was 26.4 for the first 11 years and 25.3 for the more recent 11 year period of time in Minnehaha County. In light of the growth of the county’s population, this is an encouraging finding.

In 2012, 24 deaths met the Committee’s criteria and all were reviewed (compared to 21 cases in 2011). Of the 24 reviewed cases, 19 were residents of Minnehaha County, two were from Brookings, one each from Moody, Union and McCook counties.

The reviewed deaths listed below are separated by their manner (natural, accidental, suicide, homicide and undetermined). The number of deaths for 2012 in each manner category is listed adjacent to its heading. Numbers listed in parentheses represent the comparable number of deaths from 1997 through 2011. Care must be taken in comparing yearly data due to the addition of Lincoln County (1998), Turner County (1999), McCook County (2000), Lake and Moody counties (2001), Union County (2002), Hanson and Minor counties (2003), and Brookings County (2004) in years subsequent to the establishment of the Committee’s work in Minnehaha County in 1997. However, as 74 percent of the reviewed cases are residents of Minnehaha County, some meaningful comparison of data between years is justified.

### Natural Deaths

<table>
<thead>
<tr>
<th>Year</th>
<th>Infant 1-14 Years</th>
<th>Infant 15-17 Years</th>
<th>Total</th>
<th>Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>16</td>
<td>10</td>
<td>4</td>
<td>30 Est 175,037</td>
</tr>
<tr>
<td>2011</td>
<td>12</td>
<td>7</td>
<td>4</td>
<td>23</td>
</tr>
<tr>
<td>2010</td>
<td>11</td>
<td>7</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td>2009</td>
<td>17</td>
<td>6</td>
<td>2</td>
<td>25</td>
</tr>
<tr>
<td>2008</td>
<td>23</td>
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<tr>
<td>1990</td>
<td></td>
<td></td>
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<td>123,809</td>
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</tbody>
</table>

Population data from US Census Bureau.

In total, 10 children died in 2012 from natural causes. Six of these children had received care for congenital conditions, long term illnesses or malignancy. Among these children’s deaths was one that occurred as an outcome of long term neurological sequelae from a vaccine-preventable childhood infectious disease.

Three children and one infant died suddenly and unexpectedly. One of these children was diagnosed with hypertrophic cardiomyopathy. The specific causes of the other two child deaths were likely caused by rare cardiac conditions that are being further investigated.

In 2012, there were no deaths attributable to sudden infant death syndrome (SIDS), though one natural death was certified as caused by a sudden unexplained infant death (SUID) as it occurred in an unsafe (but not obviously lethal) sleep environment. As noted in Figure 1, there were three other infant deaths that occurred in unsafe
sleep environments. The manner of two of these other infant deaths was certified as undetermined and one was certified as accidental. The four infant deaths occurring in sleep in 2012 is equal to the mean for such deaths in the region for the past five years (2008-2012). As noted in previous reports, in recent years there has been increasing awareness of the importance of death scene investigations of sudden infant deaths. When hazards are identified in the environments where these deaths occur, their cause is now increasingly identified as accidental, undetermined, or as natural with the cause listed as SUID rather than SIDS. Figure 1 notes how these deaths have been identified over the past 12 years.

The most recent national data available show that in 2010 the rate of SIDS was 0.516 per 1,000 live births that equates to zero to one death per year in the RICMRC 10-county area. As noted in Figure 1, since 2000, only in 2008 has that number of deaths due to SIDS been exceeded. Nonetheless, the annual number of infant deaths during sleep has been consistent and demands community attention to the need to educate the public on environmental hazards for safe infant sleep.

Two children died as passengers in high impact auto crashes. In both cases, the children were appropriately restrained in the vehicles that crashed. The causes of these crashes were attributed to a medical condition of one driver and alcohol use by the other. Similar to findings in 2011, a positive outcome of the review of 2012 deaths is the fact that no deaths involved teenage drivers.

As noted in Figure 1, there was one death of an infant that occurred during sleep that was ruled an accident due to the hazards present in the sleep environment.


Similar to previous years, in 2012, there was one suicide that this year did not involve a firearm. This death reveals the complexity of emotional development and mental health care needs of adolescents.


On average, there has been about one homicidal death of a child per year in the region. Though none occurred in 2011, there was one such death in 2012. This death was the result of a toddler’s head injury inflicted by a non parental caregiver. This case reveals the need for social supports for immigrant families who struggle with multiple challenges while integrating into a new community.


As noted in Figure 1, there were two deaths of infants whose cause was certified as undetermined. In each of these cases, the baby was found dead in an unsafe sleep environment that could have potentially caused the death. One of these cases involved co-sleeping with an intoxicated parent.

Advocacy Issues

1. The Big Sioux River creates safety hazards for the region. Over time, the Committee has advocated for live saving equipment in Falls Park. The 2011 death of a child tubing on the river has prompted the Sioux Falls Fire Department’s provision of education on water safety. These efforts are applauded and their continuation is encouraged as the river’s attractiveness as a venue for sporting activities will be an ongoing enticement for children.
2. The Committee’s 2011 annual report was published in South Dakota Medicine. We hope that this publication will alert all of the state’s physicians about the health risks confronting infants and children. With the ongoing number of deaths each year attributable to unsafe sleep environments, we are hopeful that those providing care to newborns and infants will reinforce the message of safe sleep. We also encourage thorough death scene investigations that may identify hazards associated with SUID.

3. Follow up activities from the 2011 State Task Force on Infant Mortality convened by First Lady Linda Dugaard, includes coordination between the South Dakota Department of Health, RICMRC and the similar committee that reviews infant deaths in the Rapid City area. These two committees have also been requested to review infant deaths occurring in counties outside of their regions. The data base established by the National Center for Child Death Review is now being used by the State for recording and analyzing data collected regarding these infant deaths. A statewide committee will be formed in 2014 to begin to analyze these reviews of all infant deaths conducted by the state’s committees.

Summary of Prevention Issues
The RICMRC concludes its report with the following recommendations (listed in the order we believe may prevent the most death and which will be the easiest to implement; starred items are repeats from earlier reports):

1.* All infants should be placed on their back to sleep. Side sleeping is not recommended. Hospitals, physicians and other health care providers must emphasize the need to place infants on their backs to sleep and to model this in their infant care practices. We should be careful not to prematurely ascribe a continuing low number of true SIDS deaths to a marked improvement in the percentage of back sleeping infants in our region since the number of SUID deaths appears to be relatively stable. The actual percentage of back sleeping in our region is unknown. Further understanding of the essential need for babies to be placed on their backs for sleep demands the effort of all those who care for infants.

2.* Infants should not be placed on or near soft bedding, blankets, quilts, pillows, crib bumper pads or sofas particularly while sleeping (even on their backs). Even for infants sleeping on their backs, adults must exercise extreme caution when sleeping with infants if intoxicated or otherwise mentally impaired. Although there is considerable controversy regarding the dangers of adult infant bed sharing, the adult bed with its soft covers and pillows is inherently dangerous for sleeping infants. Couches and soft chairs are particularly dangerous environments for infants, especially if shared with a sleeping or intoxicated adult. Of note is how the city of Chicago and the state of Maryland have outlawed the sale of bumper pads for cribs. The American Academy of Pediatrics, the U.S. Centers for Disease Control and Prevention and the National Institutes of Health recommend against their use.

An additional risk associated with soft bedding is the potential for overheating of sleeping infants. Caregivers should be careful that the environmental temperatures where infants are sleeping are comfortably in the lower “room temperature” range.

3.* Maternal tobacco and alcohol use are known risk factors for SIDS/SUID. Maternal smoking, both during and after pregnancy, also represents a risk factor for SIDS/SUID. Secondhand smoke is an additional SUID risk factor. Parents should make every effort to restrict the use of alcohol, tobacco and illicit drugs for the well-being of their infants, both before and after the baby’s birth. We encourage the creation of programs that assist parents in abstaining from tobacco and alcohol use. After adherence to the Safe Sleep programs for infants, cessation of maternal smoking during and after pregnancy is the next best way to prevent sudden infant deaths.

4.* The sleeping environments for all children and adults should be protected by working smoke detectors. Since 2008, seven children’s lives may have been saved by a functioning smoke detector. The Committee supports and encourages the ongoing efforts of local fire departments in educating the public about the need for families to install and service smoke detectors to assure their ability to provide life saving warnings of home fires.

5. Adolescence is a time of vulnerability to social pressures and emotional volatility. Adult sensitivity to these issues and advocacy for mental health for teens must continue as suicide poses a threat to teenagers and a cause of trauma for survivors of this loss of life.

6. Care must be taken that all infants and children have periodic physical examinations to detect potentially preventable and treatable illness and immunizations. Vigilance in assuring that infants and children are up to date on immunizations may prevent loss of life from an infectious illness.
7. Recreation along the Big Sioux River and Falls Park poses dangers that require adult supervision of children’s play in this area. Several drownings and near-drownings have occurred on the river. The attraction of the natural beauty of the Big Sioux River and falls demands vigilant efforts to guard against their concomitant dangers.

8. Window covering that have attached cords present a choking hazard for children. Parents in homes that include this form of window blind must be aware of how cords may attract the attention of infants, toddlers and young children. Nationally, the hazards of such cords have increasingly been brought to the recent attention of the public in the aftermath of deaths caused by them. A local death due to cords attached to curtains brings this concern to our community and warrants use of cordless window coverings and vigilant care to assure that cords on window coverings are kept far away from the reach of young occupants of a residence.

Report submitted by the Regional Infant and Child Mortality Review Committee
Jim Sideras, RN, MS, Chair, Sioux Falls Fire Department
Ann Wilson, PhD, Vice Chair, South Dakota State University
Jerry Blake, MD, Sanford Health
Vicki Burger, BSW, South Dakota Department of Social Services
Connie Byrne-Olson, MS, Sanford Health
Carol Cressman, BSN, Sanford Health
Courtney Ehlers, RN, Avera Health
Nancy Free, DO, Child’s Voice, Sanford Health
Lt. Blaine Larsen, Sioux Falls Police Department
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Jim Sideras, RN, MS, Chief, Fire Division, Sioux Falls.

Acknowledgement
The authors express their gratitude to Brad Randall, MD, for his review of this manuscript.
8-year-old Patient with Multiple Large Cerebral Abscesses Successfully Treated with Stereotactic Aspiration: Case Report and Literature Review

By David C. Stevens, MD; and Wilson T. Asfora, MD, FACS, FRCSC, FAANS

Abstract
The case presented herein is of an 8-year-old female with nine large brain abscesses of unknown etiology. One lesion was excised by craniotomy. Two days later, in view of impending brain herniation, the remaining eight abscesses were treated on an urgent basis by stereotactic aspiration. Immediate postoperative CT showed total disappearance of all lesions. This case demonstrates that some brain abscesses can be successfully treated utilizing a minimally invasive technique and aggressive antibiotic therapy, without necessitating surgical removal of abscess capsule, multiple aspirations, or implantation of an irrigation system.

Introduction
Cerebral abscess occurs at a rate of four cases per million.1 The introduction of cross sectional imaging, advances in antibiotics and refinement of neurosurgical technique have improved outcomes over the past 50 years. Despite these advances, cerebral abscess is still a source of significant morbidity and mortality.2 The following case provides an excellent example of this pathology, and is unique because of the number of simultaneous abscesses, the rapid deterioration of the patient and her successful recovery with antibiotics and stereotactic aspiration.

Case Report
A previously healthy 8-year-old girl was admitted to the hospital for dehydration secondary to vomiting. Four days prior to admission she began experiencing cough, fever, headache, vomiting, runny nose and decreased oral intake. The day prior to admission, she was evaluated as an outpatient, deemed stable, and sent home with oral rehydration. She returned to clinic the next day with repeated retching and intolerance of clear liquids. The patient’s, gestation, birth and development were unremarkable. She had a questionable history of iron deficiency anemia, had no other known medical conditions and took no medications. The mother denied any recent dental work, travel outside of the United States, ingestion of uncooked meats or unpasteurized dairy products, sick contacts or tuberculosis exposure. The patient is of Asian descent, lives out-of-state with her custodial parent (father), has no pets and was visiting family locally at the time of admission.

The examiner noted that her temperature was 101.2 degrees, blood pressure 108/60 mmHg, pulse 102 and

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<th>Table 1. Summary of Testing Results</th>
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<tr>
<td><strong>Admission Blood Laboratory Results</strong></td>
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<tr>
<td>WBC: 19,000/microliter</td>
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<tr>
<td>Neutrophils 89%</td>
</tr>
<tr>
<td>Lymphocytes 7%</td>
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<tr>
<td>Eosinophils 1%</td>
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<tr>
<td>Basophils 0%</td>
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<tr>
<td>Hemoglobin 9.2 g/dL</td>
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<td>Platelets 501,000/microliter</td>
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<td>Complete metabolic panel: normal</td>
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<tr>
<td>Urinalysis: normal</td>
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<tr>
<td><strong>Trans Esophageal Echocardiogram</strong></td>
</tr>
<tr>
<td>No vegetations, shunts, or structural abnormalities</td>
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<td><strong>Investigation for Adjacent Infection</strong></td>
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<tr>
<td>Sinuses clear on Head CT.</td>
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<td>No dental abscess on mandibular plain film</td>
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<td><strong>Serology</strong></td>
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<td>Negative: blastomycosis, cryptococcus, histoplasmosis, coccidioides, aspergillus, toxoplasmosis, parvovirus, West Nile virus, CMV, EBV IgM candida, TB, echinococcus, taenia soleum. Bacterial culture of blood and urine</td>
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<td>Positive: mycoplasma IgM</td>
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respirations 16 per minute. The patient responded appropriately to questions. Cranial nerves II-XII were intact. She had normal sensation throughout her lower extremities. Grip strength was 5/5 and gait was unremarkable. She did have mild abdominal tenderness without rebound or guarding. Leukocytosis was noted on initial blood work (Table 1).

Initially, nausea and vomiting were thought to be infectious, but abdominal pain and tenderness were concerning for appendicitis. Pediatric surgery was consulted and an abdominal CT showed a patent, 6 mm appendix with no adjacent stranding or free abdominal fluid. Appendicitis was deemed unlikely.

Despite rehydration, the patient exhibited intermittent vomiting, fevers, headache, and abdominal pain. Her mother noticed decreased verbalization, and the nursing staff reported that the patient would intermittently scream and cry without provocation. On hospital day five, after exhibiting urinary incontinence, disorientation, and lethargy, the patient was transferred to the pediatric intensive care unit (PICU). She was alternatingly agitated and minimally responsive with a heart rate in the 40s-50 and Glasgow Coma Scale of 10 (eyes 1, verbal 4, motor 5). Head CT showed multiple ring-enhancing lesions with surrounding vasogenic edema (Figure 1a). The patient was intubated to protect her airway, loaded with phenytoin for seizure prophylaxis, and started empirically on antibiotics (metronidazole, vancomycin, azithromycin) and antifungals (caspofungin). Neurosurgery and pediatric neurology were consulted, and an aggressive infectious disease workup was initiated (Table 1).

The following day, MRI confirmed the presence of nine ring enhancing lesions located in the frontal lobes bilaterally, left parietal lobe, right thalamus and anterior left temporal lobe (Figure 1b). Diffusion weighted sequence showed increased signal intensity (Figure 1c). The lesions measured from 2.6 to 3 cm in diameter. Mild rightward midline shift was noted due to predominance of lesions in the left hemisphere. A left temporal craniotomy revealed an abscess containing green, purulent material. The abscess capsule was removed and subdural intracranial pressure (ICP) monitor was placed. Gram stain showed gram-positive cocci. The patient was returned to the PICU with plans to treat the remaining eight abscesses with long term IV antibiotics.

Postoperatively, consecutive ICP measurements greater than 20 cm of water were noted. Physical exam showed a sluggish but responsive left pupil and a brisk right pupil. The elevated ICP was initially managed with hypertonic saline, corticosteroids, hyperventilation and sedation. Vasopressors were used to maintain adequate cerebral perfusion pressure. The patient's ICP remained in the 20s with peaks to the upper 30s. On the second postoperative day, the patient was placed in a pentobarbital induced coma due to refractory intracranial hypertension.

In light of the persistently increasing intracranial pressure and asymmetric pupils, urgent drainage of the abscesses was planned to alleviate intracranial hypertension and avoid transtentorial herniation. After reviewing all options, stereotactic aspiration was chosen because of the multiplicity of abscesses and their location in deep and eloquent brain areas. During surgery, approximately 8 mL of purulent fluid was drained from each abscess and sent for gram stain and culture. At the conclusion of the stereotactic
aspiration, an intraparenchymal pressure monitor was placed through a separate incision and showed normal ICP. Other than 50 mL of blood loss from one of the drained abscess cavities, the surgery was uncomplicated. A CT scan (Figure 2) obtained immediately post procedure showed no intracerebral or intraventricular hemorrhages and confirmed the successful evacuation of all lesions.

The patient was brought back to the PICU in stable condition with normal ICP. The following day, ICP remained normal and sedation was weaned. The patient followed commands appropriately. However, due to pulmonary aspiration, she was not successfully extubated until postoperative day six. Eventually, culture of aspirated abscess contents revealed S. intermedius sensitive to penicillin. IV vancomycin, ceftriaxone and metronidazole were continued for approximately four weeks. She was discharged on IV Ceftriaxone. Residual deficits present on discharge included subtle word finding difficulties and mild aspiration of thin liquids. However, the patient was able to walk, speak and process information at an age appropriate level.

Despite thorough investigation, no source of infection or predisposing condition was found. The presence of serum IgM antibodies against mycoplasma was unlikely to explain the formation of cerebral abscesses, and the patient was treated with five days of azithromycin for possible coexistent respiratory infection. Transesophageal echocardiogram did not reveal vegetations or cardiac anomalies, and no adjacent cranial infections were seen on imaging.

Discussion

A study of 54 children diagnosed with cerebral abscess found that on presentation, 50 percent had headache, 30 percent fevers, and 22 percent vomiting. In other studies, not limited to children, these presenting symptoms are even more common. Seizures are described in 20-26 percent of presenting patients. Focal and generalized neurologic deficits can also be seen on presentation. Severity of these deficits is one of the strongest predictors of outcome.

The diagnosis of cerebral abscess relies on clinical findings and brain imaging. Laboratory investigations usually indicate infection, but are not specific. Cerebrospinal fluid tends to be sterile, and lumbar puncture is generally contraindicated because of the risk of herniation secondary to elevated ICP. Blood cultures are rarely fruitful but should be obtained prior to antibiotic treatment.

Both CT and MRI are very sensitive for detecting intracranial abscess. MRI provides increased anatomic detail and improved ability to differentiate abscess from neoplasm. For example, increased intensity on diffusion weighted imaging (DWI) is indicative of purulent abscess over neoplasm. The availability of such imaging has been vital to the reduction of mortality among patients with cerebral abscess, and plays an essential role in diagnosis.

Predisposing conditions are identified in 70-85 percent of cases of cerebral abscess. The most common are congenital heart malformation and adjacent infections (sinusitis, chronic otitis media and otogenic infections). Less common predisposing conditions include prior intracranial surgery, penetrating head trauma, and hematogenous spread. Streptococcal species are the most common organisms isolated from cerebral abscesses, and S. intermedius is the most common group. The identification of Streptococcal species on culture is not helpful in localizing the source infection because it can be found in any adjacent infection, bacteremia, and traumatic penetration wounds.

Multiple cerebral abscesses are treated through a combination of medical and surgical strategies. Abscesses greater than 2.5 cm in diameter, those resistant to antibiotic therapy and those causing mass effect should be drained, either through excision or aspiration. If no lesion meets these criteria, the patient can be managed medically.

Broad spectrum IV antibiotic therapy is the foundation of medical management and should be provided to every patient. Empiric treatment generally consists of vancomycin, ceftriaxone and metronidazole. The regimen may be adjusted depending on sensitivities and should
continue for four to eight weeks. Even if surgical drainage is not indicated, a bacterial specimen may help guide therapy and should be obtained prior to the start of antibiotics when possible. Corticosteroids are reserved for patients exhibiting neurologic deficits from cerebral edema.

Throughout treatment, weekly imaging and close clinical observation are necessary. Prompt surgical intervention is warranted in any of the following situations: 1) decrease in mental status at any time, 2) abscess growth after two weeks of IV antibiotics and 3) no decrease in abscess size after four weeks of antibiotics. After completion of antibiotics, monthly imaging should occur until abscess capsules have disappeared. Most lesions will show complete resolution of contrast enhancement and abscess cavity in two to six months.

When indicated, surgical intervention can take three forms: stereotactic aspiration, endoscopic evacuation and craniotomy with excision. Stereotactic aspiration, where lesions are localized via CT or MRI and aspirated with a thin needle through a small craniotomy or burr hole, is the least invasive and preferred method of evacuation. Neuroendoscopy and full craniotomy are more invasive, but allow for treatment of multiloculated abscess or removal of retained debris.

Unfortunately, many children treated for cerebral abscess will develop neurologic sequelae including seizures, cognitive impairment and focal neurologic deficits. While focal deficits are generally apparent by the time of discharge, seizures and cognitive impairment may not be identified until later. Studies from the pre-CT era indicate the incidence of seizures and cognitive impairment to be as high as 70 percent. More recent studies indicate decreasing incidence of neurologic sequelae. Seizures often have a delayed presentation after cerebral abscess, with the mean latency period as long as three years.

**Conclusion**

This case suggests that brain imaging should be obtained in children presenting with abnormal mental status and persistent fever of unknown etiology to rule out cerebral abscess. Our patient’s quick and almost complete recovery supports the efficacy of minimally invasive treatment methods such as computer guided stereotactic aspiration and aggressive antibiotic therapy in cases of multiple cerebral abscesses.

### References


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Opioids are commonly used for chronic pain management, but their use is often complicated by side effects. Constipation is the most frequent adverse effect of opioid therapy with up to 50 percent of patients reporting constipation. Unlike most other opioid-induced gastrointestinal side effects, constipation usually persists throughout treatment since tolerance does not develop. Thus, constipation associated with opioid use may prompt opioid discontinuation or dose reduction, possibly leading to decreased pain management and decreased quality of life.

Opioid receptors are widely distributed throughout the enteric nervous system. Binding of opioids to these receptors suppresses neuronal excitability and inhibits the release of important neurotransmitters, such as acetylcholine. Opioid-induced constipation (OIC) results mainly from increased smooth muscle tone and reduced motility in the gastrointestinal tract, inhibiting the coordinated peristalsis required for propulsion. Opioids also cause enhanced fluid absorption and reduced gut secretions, resulting in the formation of harder stools. Due to its complexity, OIC often poses significant challenges for health care providers.

Management of OIC is necessary to enhance quality of life and to prevent gastrointestinal complications. Laxatives, such as senna and docusate, are frequently used for the management of OIC despite the limited data available regarding their efficacy and safety. Most laxatives work by improving stool consistency and/or promoting peristalsis. However, laxatives work nonspecifically in the gastrointestinal tract and do not target the underlying mechanism of OIC. Thus, current laxative therapy is often ineffective for patients suffering from OIC.

Subcutaneous methylnaltrexone is a selective mu-opioid receptor antagonist approved in 2008 for the treatment of OIC in patients with advanced illness whose response to laxative therapy has been inadequate. Methylnaltrexone is a quaternary derivative of the opioid receptor antagonist, naltrexone. The structural modification increases the polarity and reduces the lipid solubility of methylnaltrexone, limiting its ability to cross the blood-brain barrier (BBB). The inability of methylnaltrexone to cross the BBB allows it to reverse opioid-induced constipation without reversing centrally-mediated analgesic benefits or precipitating opioid withdrawal.

A multi-centered, randomized, double-blind, placebo-controlled trial was conducted by Thomas et al. to compare the efficacy of methylnaltrexone versus placebo in the treatment of OIC. The study randomized 133 patients to either 0.15 mg/kg subcutaneous methylnaltrexone (n=62) or placebo (n=71) on alternate days for two weeks. Dose escalation was permitted during the second week of treatment if warranted by patient response. Participants were 18 years of age or older and had advanced illness with a life expectancy of at least one month. Eligible individuals had also previously received opioid analgesia for at least two weeks and suffered from OIC. Opioid-induced constipation was defined as either fewer than three laxations during the week preceding the study and no laxation within 24 hours prior to the first dose of study drug or no laxation within 48 hours prior to the first dose of study drug. Patients were required to have a stable dosing regimen of opioids and laxatives for a minimum of three days before entering the study.

The co-primary outcomes of the study were the proportion of patients with rescue-free laxation within four hours after the first dose and the proportion of patients with rescue-free laxation within four hours after two or more of the first four doses (Figure 1). In the methylnaltrexone group, 48 percent of patients had laxation within four hours of initial treatment versus 15 percent in the placebo group (p<0.001). Additionally, 52 percent of patients in the methylnaltrexone group experienced laxation within four hours after two or more of the first four doses as compared to 8 percent in the placebo group (p<0.001). The study also evaluated time to laxation with individuals in the methylnaltrexone group showing a median time to laxation of 6.3 hours after the first dose as compared to greater than 48 hours in the placebo group (p<0.001).

Methylnaltrexone was well tolerated by patients with advanced illness and OIC. Investigators deemed most reported adverse effects as mild or moderate. At least one adverse effect was reported by 81 percent of patients...
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receiving methylnaltrexone and 80 percent of patients receiving placebo. The most common adverse effects associated with methylnaltrexone were gastrointestinal effects, such as abdominal pain and flatulence, but no significant differences were found between study groups. Study results also indicated no difference in pain scores or opioid withdrawal scores between study groups (Table 1).7

The aforementioned study only included patients with advanced illness, and methylnaltrexone is currently only FDA-approved for treatment of OIC in patients with advanced illness whose response to laxative therapy has been insufficient. Nevertheless, success with methylnaltrexone has also been reported in additional patient populations including patients with chronic pain, burns, soft-tissue injuries, and critical illness.1,6,9 Although reports suggest efficacy in these populations, future clinical studies are necessary to demonstrate efficacy of methylnaltrexone in the management of OIC in additional populations.

Methylnaltrexone is an alternative for patients with advanced illness who are experiencing OIC. Clinical trial data demonstrates efficacy and reveals a favorable safety profile. Further investigation of the use of methylnaltrexone in additional practice settings is needed to identify other patient populations who may benefit.

Table 1. Mean Scores for Pain Assessment and Symptoms of Opioid Withdrawal

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<th>Placebo</th>
<th>Methylnaltrexone</th>
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<tr>
<td>Score for Current Level of Pain</td>
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<tr>
<td>Baseline</td>
<td>3.5 ± 2.6</td>
<td>3.6 ± 2.7</td>
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<tr>
<td>Day 1</td>
<td>3.6 ± 2.5</td>
<td>3.4 ± 2.3</td>
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<tr>
<td>Day 7</td>
<td>3.5 ± 2.6</td>
<td>3.4 ± 2.4</td>
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<tr>
<td>Day 14</td>
<td>2.7 ± 2.2</td>
<td>3.4 ± 2.6</td>
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<tr>
<td>Score on Modified Himmelsbach Withdrawal Scale</td>
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<tr>
<td>Baseline</td>
<td>8.2 ± 1.8</td>
<td>8.3 ± 1.5</td>
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<tr>
<td>Day 1</td>
<td>7.8 ± 1.5</td>
<td>7.8 ± 1.2</td>
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<tr>
<td>Day 7</td>
<td>8.1 ± 1.8</td>
<td>7.9 ± 1.7</td>
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<tr>
<td>Day 14</td>
<td>8.3 ± 2.4</td>
<td>8.2 ± 1.8</td>
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Table 1. Adapted from reference 7.

This study included a three-month, open-label extension period as well. Enrolled participants received subcutaneous methylnaltrexone as needed every 24 hours for up to three months. A total of 82 patients were included in this extension study, 42 patients who had previously received methylnaltrexone and 40 patients who had previously received placebo. Following methylnaltrexone administration, patients previously receiving methylnaltrexone had rescue-free laxation rates of 45-58 percent and those previously receiving placebo had rescue-free laxation rates of 48-52 percent. Among individuals experiencing laxation within four hours after receiving a dose, the overall mean time to laxation was less than 45 minutes for both groups combined.7

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<td>Day 7</td>
<td>3.5 ± 2.6</td>
<td>3.4 ± 2.4</td>
</tr>
<tr>
<td>Day 14</td>
<td>2.7 ± 2.2</td>
<td>3.4 ± 2.6</td>
</tr>
<tr>
<td>Score on Modified Himmelsbach Withdrawal Scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>8.2 ± 1.8</td>
<td>8.3 ± 1.5</td>
</tr>
<tr>
<td>Day 1</td>
<td>7.8 ± 1.5</td>
<td>7.8 ± 1.2</td>
</tr>
<tr>
<td>Day 7</td>
<td>8.1 ± 1.8</td>
<td>7.9 ± 1.7</td>
</tr>
<tr>
<td>Day 14</td>
<td>8.3 ± 2.4</td>
<td>8.2 ± 1.8</td>
</tr>
</tbody>
</table>
Risk – it’s everywhere you look and in just about everything you do. Oftentimes we forget that risk is with us every day. It’s important to ask yourself how much risk can you handle (financially) or, more importantly, how much risk are you willing to accept?

As discussed in the first article in this series, “The Risk Management Process,” health care organizations use risk management to prevent and control patient injuries and medical malpractice claims and losses. While developing an effective risk management program requires a substantial investment of time and effort, more often than not, the return on investment is realized through increased patient satisfaction, reduced losses due to medical malpractice claims and lower insurance premiums.

Identifying risks within your facility and your day-to-day operations is the first step in developing a risk management style of practice. Risks can be identified through a variety of sources including patient satisfaction surveys, patient complaints, incident (accident) reports, occurrence screenings, risk management assessments – which can be conducted through on-site assessments, or by an outside source or self-assessment tool – and malpractice claim data and research.

When conducting a self-assessment, be honest and self-critical. Self-assessments are designed to help you identify and begin correcting patient safety and risk management issues in your clinic’s health care delivery and day-to-day operations. Analyze your clinic’s operations carefully and respond accurately as the self-assessment will only be as effective as you allow it to be.

When conducting a self-assessment of your clinic, be sure to assess the following:

- Assessment and care – service provided to patients;
- Communication – with patients and among staff;
- Credentialed and privileged practitioners;
- Equipment use;
- Infection control – procedures and protocols;
- Information management and security;
- Medication management – including storage;
- Organizational structure;
- Orientation and training of staff;
- Rights and ethics;
- Physical environment of the facility (internal and external);
- Quality improvement expertise and activity;
- Patient safety; and
- Staffing.

In partnership with MMIC, the SDSMA Center for Physician Resources has made available on SDSMA’s website two self-assessment tools – the Clinic Risk Management Self-Assessment and the Clinic EHR Risk Self-Assessment – to help you assess your facility and operations. MMIC clients can log on to My Account at www.MMICgroup.com and go to Risk Management, Tools and Resources, Self Assessments for an interactive online version with an automated recommendation report and benchmarking capabilities.

These assessments do not evaluate clinical quality of care or credentialing within your clinic. The Joint Commission (formerly the Joint Commission on Accreditation of Healthcare Organizations) is another excellent resource to locate mock surveys and other self-assessment tools to assist you in this process.

Finally, while all hazards should be addressed, resource limitations often do not allow this to happen all at one time. Upon completion of your self-assessment, be sure to evaluate areas of concern with respect to the likelihood a problem may occur and the seriousness of the situation. This risk analysis can be used to target resources at events that are the most likely to occur or that carry significant potential to cause patient harm.
You’ve spent your career saving for retirement. Your wealth enhancement strategy was spot on, and you’ve finally come to the next exciting journey. It may seem there’s little left to do except enjoy the accumulated fruit of your labor. But in actuality, without as many – or any – income sources, it is important to employ the right withdrawal strategy in order to maximize portfolio sustainability and mitigate tax concerns.

The right wealth enhancement withdrawal strategy will deploy your money in a way that funds lifestyle expenses while ensuring portfolio longevity. Typically, withdrawal strategies are tied to an established financial goal or adjusted to meet a standard level of distribution your accumulation can accommodate. Either way, a solid withdrawal strategy typically includes three facets:

1. Comfortable living – Your strategy needs to allow for a withdrawal rate that enables you to maintain your desired standard of living and continue to accomplish all that is important to you. Understanding your expenses during your employment years and how they will differ in retirement is critical in determining a sustainable withdrawal rate.

2. Portfolio sustainability – People are living longer. In order for your assets to remain intact during an extended retirement period, your withdrawal strategy should draw out assets systematically but with flexibility so that market returns – and other variables that help enhance the growth of those assets – will continue to benefit your portfolio. This facet answers the question, “Can I withdraw in such a way that allows remaining assets to continue to grow over time?”

3. Tax mitigation – Remember that dollars utilized in retirement can be taxed differently. Pulling funds out of a 401(k) or an IRA – which is taxed upon withdrawal – should be weighed against pulling funds from a Roth IRA or non-qualified account. Understanding and properly managing taxes is critical. This is an exercise that requires communication and collaboration among your team of professional advisors – primarily your financial advisor and accountant. This facet answers the question, “Can I withdraw at the right time and from the right source so that I avoid unnecessary taxes?”

At the end of the day, the best advice is to plan ahead and have a strategy. Withdrawal strategies are not “auto-pilot” approaches – they must be continually evaluated based on the individual’s needs, tax bracket and portfolio performance. Assets must remain fully diversified. Cash flow must be understood and managed accordingly. That’s why it’s important to get your investment advisor and accountant communicating directly with one another. If you do, you’ll find that once you retire, a solid wealth enhancement withdrawal strategy provides much needed confidence and peace of mind.
I bet I hear it once a week. “It’s hell to grow old!” Of course growing old is something we all will do, unless we die first. Alas, the future can look quite sad and depressing, especially if you think about the flab, falls, pain, blues, anxiety, thin bones, loss of libido, weakness and memory loss that can come with aging.

But wait! Listen to the exciting news. Just out, there is a powerful potion that can prevent the aging process. That’s right, guaranteed to slow aging.

Researchers have observed how shortly after starting this terrific tonic: flab turns to muscle; falls are reduced; chronic pain and fibromyalgia seem magically lessened; depression and anxiety disappears; bones are actually strengthen; sexual function is enhanced and recharged; people experience new strength, energy, and power; and most important memory is clearly improved. What’s more, this special medication has also been shown to reduce diabetes, heart attack, stroke and breast or colon cancer.

That’s not all. If you take advantage of this fabulous offer today, it will improve your appearance within weeks. Sounds too good to be true? It is scientifically proven, beyond a shadow of a doubt. And no other treatment plan comes even close. Nothing!

You could expect to work lots of extra hours each day to achieve these wonderful benefits. But no! You don’t have to work an extra two hours at the beginning or end of your workday, you don’t have to work even one extra hour.

Starting today we have a special opportunity. For spending only an extra half hour every day walking 12 blocks, yes that’s right, just 12 blocks, or whatever distance you can make in 30 minutes, you will receive most of the benefits I mentioned earlier. That’s right, only a half hour!

But wait, this offer only lasts for a short time. The longer you delay, the less you will get. If you start today, the benefits begin sooner and last longer.

That’s right, guaranteed to slow aging. Exercise is the bargain of a lifetime.
This article is the first of a two-part series focusing on immunizations in South Dakota. The second article in November will focus on the influenza (flu) vaccination.

The adage “When you have your health, you have everything,” should be the founding principle of America’s emphasis on preventive care. The National Prevention Council, chaired by the U.S. Surgeon General, presented the first ever National Prevention Strategy which recognizes quality medical care and disease prevention are both necessary for positive health outcomes.¹

Every year, approximately 50,000 adults die from vaccine-preventable diseases in the U.S. In 2011, the U.S. Department of Health and Human Services issued a call for the expanded overall use of vaccines particularly for adolescents and adults.² There is a vocal, misinformed minority that seeks to undermine the efforts to broaden the population that is vaccinated against preventable diseases. Efforts of these few are in total contradiction to the National Prevention Strategy. “Making vaccines more convenient is likely to improve their uptake,” said Bruce Gellin, national vaccine program office director at the U.S. health department.³

To increase rates of immunizations, communities across South Dakota and the nation have expanded locations beyond the traditional clinic walls to offer more opportunities to get the flu shot. Nationwide, more than 65 percent of flu-vaccinated adults get their influenza vaccine somewhere other than a physician’s office.⁴ Increasing alternative locations for immunizations could help achieve improved health for thousands. However, it is important to be mindful that in a rush to serve the public good, public safety cannot be neglected.

Questions and concerns about safe medical practices routinely come to the South Dakota Board of Medical and Osteopathic Examiners (SDBMOE). To provide guidance and clarity for South Dakota health care professionals and the increasing number of non-traditional delivery methods for vaccines, the SDBMOE issued a declaratory ruling on what is required by South Dakota laws and rules when it comes to immunizations. The SDBMOE’s ruling confirms current South Dakota vaccination practice, lists authorized prescribers and those who can give injections. The ruling also provides a sound structure moving forward with an increasing number of providers in the business of immunizations. A complete copy of the ruling can be obtained from the SDBMOE website or office.

The authorized prescribers licensed by the SDBMOE include the allopathic and osteopathic physicians as well as physician assistants. Certified nurse practitioners, certified nurse midwives and the providers of dentistry, optometry, podiatry, and veterinary medicine are authorized prescribers in South Dakota and licensed by boards other than the SDBMOE. Paramedics licensed by the SDBMOE with education/training as established by the SDBMOE may administer injections. Medical assistants registered with the SDBMOE may administer vaccinations and medications from either a single or multi dose vial with direct supervision of a physician, certified nurse practitioner, certified nurse midwife or physician assistant who assures appropriate training, competence, and assumes ultimate responsibility for administration of such drugs. Registered nurses and licensed practical nurses are licensed and regulated by the South Dakota Board of Nursing and may administer injections. Pharmacists are licensed and regulated by the South Dakota Board of Pharmacy and may administer influenza immunizations without a prescription or other immunizations with a patient specific prescription or order written by an authorized prescriber.

The majority of South Dakota physicians do not need to make changes to how immunizations are provided to their patients. Physicians will continue to prescribe and delegate to those professionals who are allowed to give injections. Standing orders will continue to be an effective and expedient patient care model.

As set out in the SDBMOE’s declaratory ruling, other organizations wishing to provide immunizations must work with a physician or medical director to develop standing orders or protocols to authorize and delegate the administration of the preventive medicines to patients. The ruling supports and protects public health with standing orders or protocols which comply with requirements specified in the ruling.

The SDBMOE’s ruling provides flexibility and direction for growth in non-traditional delivery methods while maintaining the confidence of the citizens of South Dakota in the safety of their health care. South Dakotans have a good thing going. Good, safe preventative care allows our residents to enjoy good health at every stage of life.

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lthough it’s currently summer-like weather outside as this is written, I suspect by the time you receive this issue it will be that perfect autumn time of the year many of us cherish in South Dakota. With October denotes many changes imposed on our industry by the Patient Protection and Affordable Care Act legislation, including the beginning of open enrollment for public (federal and/or state-run) health insurance exchanges. This month’s article may seem somewhat “dry” in comparison to some of our recent submissions, but we ask you to please read this in its entirety as it is extremely important to the agreements DAKOTACARE has with each of you and your clinics.

The HIPAA Omnibus Rule became effective on March 26, 2013 with a compliance period of 180 days, therefore requiring compliance as of Sept. 23, 2013. The intent is to further protect patient privacy and secure health information. Important for this discussion, these new “final rules” impact who is considered a business associate, in turn affecting business associate agreements, privacy notices, security breach notification rules, marketing communications and an individual’s right to access/protect health information (PHI). The U.S. Department of Health and Human Services (HHS) goes into great length in discussing who is, and who is not, considered a business associate.

The new final rules also expand enforcement, including making covered entities liable for acts of a business associate where a relationship exists and making business associates directly liable for a number of privacy and security requirements, rather than just having contractual liability noted in the Business Associate Agreement (BAA).

So what does this mean to you?

DAKOTACARE BAAs are in the process of being updated and will be forwarded as they become available to those who need the newer updated language. By definition, you are one of our business associates and as such the following updates apply:

1. The definition of a business associate changed to include all the subcontractors used by you and/or your practice. This means that all of your vendors/subcontractors have to sign a BAA (if they create, receive, maintain or transmit PHI on your behalf) agreeing to the same restrictions and conditions as you do with DAKOTACARE.
   a. The key to this rule is that subcontractors will need BAAs with their subcontractors “no matter how far down the chain” as long as PHI is being used. The subcontractor BAA must be at least as stringent as the BAA above it (you).
   b. The language delineating the requirement for notification by you to DAKOTACARE of any subcontractors is already in your contract language as well as noted in our Provider Manual, which is available through our Provider Portal.

2. Business associate (you) must agree to comply with all requirements of the privacy rule which apply to the covered entity (us).

3. Business associate (you) must agree to comply with the HIPAA security standards with respect to electronic PHI and must report (to us) any breaches of unsecured PHI as required under the security rule.

4. If a patient does both (1) pays out of pocket IN FULL for the service AND (2) requests a restriction on the disclosure of the service, you as the provider are required to restrict the disclosure of that service. However, it is not your obligation to notify anyone of the restriction (for re-emphasis: both elements above have to be in place or the PHI restriction is not available).

The following are some other aspects of this rule change, which may apply to your care to DAKOTACARE members:
   a. If services are bundled and the patient only has paid out-of-pocket for some services, you as the provider must restrict disclosure only of the services for which the patient has paid out-of-pocket. If
you can’t unbundle, the services are to be disclosed. The patient has to pay out-of-pocket for all bundled services or the restriction does not apply.

b. If there are follow-up services related to the service being restricted, the patient has to pay out-of-pocket for the follow-up care or the previously restricted information is no longer considered restricted. The only way it would stay restricted would be for the patient to pay out-of-pocket for all follow-up care associated with said service(s).

c. Out-of-pocket payments associated with restricted information do not apply to out-of-pocket maximums through the health plan. We suspect members will not realize this until “after the fact” and will do as much as possible on our end to educate them on the subtle nuances of this legislation.

5. Finally, the new rule also stipulates that 50 years after death of an individual, their health information is no longer considered PHI.

Any questions? Please forward them to Jacque at privacy@dakotacare.com.

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**Don’t miss the SDSMA 2014 Annual Meeting!**

May 30-31 at the Ramkota Hotel in Rapid City.

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**Special Features**

**Don’t miss the SDSMA 2014 Annual Meeting!**
South Dakota Foundation for Medical Care (SDFMC) has completed the second year of the 10th Statement of Work (SOW), a three-year quality improvement contract with the Centers for Medicare & Medicaid Services (CMS). The emphasis is on providing opportunities for SDFMC and health care providers to collaborate in achieving ambitious goals for improving the quality of care provided to Medicare beneficiaries in South Dakota. The following is a summary of the projects and progress made to date.

Reducing health care-associated infections. SDFMC is working closely with 12 Prospective Payment System (PPS) hospitals toward the goal of a 20 percent reduction in health care infections, including central line-associated bloodstream infections (CLABSI), catheter-associated urinary tract infections (CAUTI), clostridium difficile infections (CDI), and surgical site infections (SSI). In addition, SDFMC provides technical support for assisting hospitals in reporting data into the Centers for Disease Control and Prevention (CDC) reporting tool called the National Healthcare Safety Network. Recent data shows continued progress in the reduction of infection rates in these facilities.

Reducing pressure ulcers and physical restraints. Twelve nursing homes participated in the first phase of the project to reduce the occurrence of pressure ulcers by 20 percent and to reduce the use of resident physical restraints below 3 percent. Rates for pressure ulcers decreased from 12.1 percent at baseline to 6.4 percent, which is a 46.9 percent relative improvement. Restraint usage decreased from 6.4 percent to 2 percent, a 68.7 percent relative improvement. Currently, SDFMC is assisting 81 nursing homes participating in a collaborative project to improve processes related to dementia care, antipsychotic use, staffing and organizational culture.

Reducing adverse drug events. SDFMC has been collaborating with four providers in a Patient Safety and Clinical Pharmacy Services Collaborative (PSPC) to reduce adverse drug events for high-risk patients. Quality measures selected are glucose monitoring (HgA1c), anticoagulation therapy management (INR) and antipsychotic use. Additional participants are being recruited during the last year of the project.

Improving hospital quality reporting. SDFMC supports the Hospital Inpatient Quality Reporting Program (IQR) and the Hospital Outpatient Quality Reporting Program (OQR) to achieve the goal of ensuring that no Prospective Payment System hospital is penalized for incomplete reporting of quality data to CMS. SDFMC also assists hospitals in their efforts to improve their performance scores and reimbursement rates under the CMS Hospital Value-Based Purchasing Program.

Reducing hospital readmissions. SDFMC has recruited six communities (based on Medicare beneficiary zip codes) to collaborate under community-wide efforts to improve practices resulting in decreased hospital readmissions within 30 days of discharge. Statewide readmission rates have decreased from 23 per 1,000 Medicare beneficiaries at baseline to 18.2 per 1,000 Medicare beneficiaries based on the most recent data, which is a 20.9 percent relative improvement.

Improving health for populations and communities. Primary care prevention and early diagnosis is an ongoing focus of SDFMC activities. SDFMC is partnering with other entities in educational efforts to improve immunization rates, cancer screenings and cardiovascular care.

Special innovation project. SDFMC is providing assistance to four Aberdeen Area Indian Health Service hospitals related to quality assurance and performance improvement (QAPI). The goal of these projects is to improve quality indicators in the emergency department and quality measures related to the Hospital Inpatient Quality Reporting Program (IQR).

Beneficiary chart review and family centered care. SDFMC continues to perform mandatory case review functions including quality of care reviews, Emergency Treatment and Labor Act (EMTALA) reviews, and reviews of provider discharge or termination of service decisions. The support of South Dakota physician reviewers is integral to our efforts to assist beneficiaries in this area.

Please call our office at 605.336.3505 or send me an email at sdschroeder@sdqio.sdps.org if you would like additional information on any of these projects.
The State has decided not to go forward with the employer-sponsored clinic and bundled payment initiatives after SDSMA expressed concerns with Gov. Dennis Daugaard and his staff.

SDSMA representatives met with the governor to discuss concerns regarding the State Employee Health Plan initiatives to establish employer-based clinics, use bundled payments and centers of excellence. As proposed, the SDSMA believes that these initiatives would erode physician-patient relationships and fragment patient care, further concentrate health care in larger cities, and jeopardize access to care in rural communities.

At the meetings, the SDSMA proposed that the focus be on lasting cost containment strategies such as preventive services and care coordination, and asked the governor to consider a medical home model that provides reimbursement to help patients navigate the system and outcomes-based shared savings that will result in more cost-effective care and lower costs.

Upon consideration, the State Employee Health Plan will deviate from what was initially proposed and, rather than establish employer-based clinics for State employees, will begin using a medical home model of delivery to allow employees to stay with their primary care physician. State employees who use the medical home model may see incentives in the form of lower deductibles, coinsurance or co-pays. When meeting with the governor, the SDSMA advocated for all clinics to be offered the opportunity to participate as a medical home if they meet State standards. The SDSMA will continue to advocate for the inclusion of all clinics that are able to meet the requirements. According to the State, Sanford Health has indicated a readiness and was cost-competitive and therefore, was selected by the State; it will include three clinic sites in Sioux Falls. Employees seeing physicians in other systems or independent physicians will not see any difference in their deductible, coinsurance or co-pays than they have today.

Of note, the State will be going forward with centers of excellence for certain medical conditions:
- Cardiac, ortho and bariatric – Sanford Health
- Renal – Avera Health
- Gastro – Sioux Falls Surgical Hospital

The State hopes to have the centers of excellence programs operational by Dec. 1 and the medical home program operational by Jan. 1, 2014.

Source: SDSMA Staff
Ending the Physician-Patient Relationship

Once a patient-physician relationship is begun, a physician generally is under both an ethical and legal obligation to provide services as long as the patient needs them. There may be times, however, when a physician is no longer able to provide care. It may be that the patient is noncompliant, unreasonably demanding, threatening to you and/or your staff or otherwise contributing to a breakdown in the patient-physician relationship. Or, it may be necessary to end the relationship simply due to relocation, retirement or unanticipated termination by a managed care plan and/or employer.

Challenges can arise when the physician desires to terminate the relationship, yet the patient continues to present for treatment. Further, if the relationship is terminated without proper notice, or in a way that harms the patient, civil liability could result.

The requirement of assistance and an opportunity to make alternative arrangements applies regardless of the reason the physician desires to terminate the relationship, including but not limited to failure to pay, failure to follow the physician’s advice, or general bad behavior on the part of the patient.

A physician must provide notice of his or her intent to terminate the relationship so that the patient has sufficient time to make alternative arrangements. Thirty days’ notice of termination is recommended, and it is also appropriate to provide a referral or other resources the patient can use to locate a new physician. The physician must continue to treat the patient while the patient seeks a replacement caregiver.

A provider remains responsible for record maintenance regardless of the termination of the physician-patient relationship. In addition, the patient is entitled to a copy of his or her medical records upon request. For more about medical records, see the SDSMA legal brief Medical Record Privacy – Patient Right of Access to Medical Records at www.sdsma.org.

For additional information about ending the physician-patient relationship, download the entire legal brief, Termination of the Physician-Patient Relationship, by visiting www.sdsma.org and clicking the SDSMA Center for Physician Resources link on the homepage. You must be logged in to view SDSMA legal briefs.

Through the SDSMA Center for Physician Resources, the SDSMA develops and delivers programs for members in the areas of practice management, leadership and health and wellness.

Source: SDSMA Staff

New HIPAA Privacy and Security Rules Went Into Place on Sept. 23

A new toolkit released by the American Medical Association (AMA) can help physicians navigate new revisions to the Health Insurance Portability and Accountability Act (HIPAA) privacy and security rules. Physicians were to comply with them by Sept. 23.

Among the key changes doctors must make are new agreements with business associates that handle patient information and privacy notices to share with patients and increased security measures for patient data.

Physicians can turn to the AMA’s free toolkit for initial guidance in meeting the new requirements. The toolkit offers practical resources physicians can use in their practices:

• A physician primer provides an easy-to-understand breakdown of the revised rules to help physicians review and update their existing HIPAA policies and procedures.
• A template business associate agreement and a notice of privacy practices are ready for adoption in the practice.
• A HIPAA security resource explains how to encrypt patient data.

The U.S. Department of Health and Human Services (HHS) issued the 563-page HIPAA omnibus rule in January, revising and extending required safeguards for protected health information and expanding individual rights of patients. The updated law also tightens requirements on physicians when patient information is breached. As a result, physician practices could face more legal scrutiny and higher fines in the event of an information breach.

The toolkit is available at www.ama-assn.org/go/hipaa.

Source: AMA

“The Issue Is” is the SDSMA’s monthly update on key policy issues of importance to physicians.
Resources Available to Guide Patients Toward Obtaining Coverage

Those who have been uninsured as a result of pre-existing conditions or limited finances may be able to acquire health insurance coverage as early as Jan. 1.

Under the Affordable Care Act (ACA), the new health insurance marketplace in South Dakota began on Oct. 1. Enrollment for 2014 will remain open through March 31.

Physicians are encouraged to help patients obtain coverage by directing them to www.healthcare.gov. A Q & A resource from the AMA is available at www.ama-assn.org/resources/doc/washington/affordable-care-act-faqs.pdf to use if your patients have questions about signing up for health insurance under the Affordable Care Act.

Source: AMA

LECC Conference Offers Prescription Drug Abuse Education

Information about prescription drug abuse will be presented at this year’s South Dakota Law Enforcement Coordinating Committee (LECC) Annual Conference.

The presentation “Prescription Drug Abuse and Identification” begins at 1 p.m. Nov. 12 in the Washington Room of the Best Western Ramkota Hotel in Sioux Falls. The risks of prescription drug misuse, types of medications and strategies most frequently used in criminal activity, common abused controlled drugs, and the responsibility of physicians, pharmacies and law enforcement in combating abuse will be discussed. Mark Gonzalez, PharmD, director, law enforcement liaison/education for Purdue Pharma, is the presenter. Gonzalez is president of the California chapter of the National Association of Drug Diversion Investigators and is lead instructor for the Department of Defense’s Regional Counterdrug, Midwest Counterdrug and Western Counterdrug training academies at their resident military bases throughout the country.

For more information or to register, contact Ace Crawford at the U.S Attorney’s Office at 605.341.1915 or aileen.crawford@usdoj.gov.

Source: LECC

Thune Letter Calls for EHR Delay

A letter sent by Sen. John Thune and Sen. Lamar Alexander to Health and Human Services (HHS) on Sept. 24 calls on the Secretary to allow additional time for health care providers to meet the Stage 2 requirements for meaningful use of EHRs.

The SDSMA and AMA believe this action is necessary not only so that vendors and providers can be ready for Stage 2, but also to provide time to make important changes to those requirements. The SDSMA has sent Sen. Thune a letter to thank him for his support in this effort.

For Your Benefit:

Get Involved in the SDSMA

Thank you for your membership in the South Dakota State Medical Association (SDSMA). As a member, you have several direct opportunities to become more involved in the important work of the SDSMA:

- The SDSMA Annual Meeting – for business, continuing medical education and networking opportunities;
- Doctor of the Day – serve as the physician for the South Dakota State Legislature during session;
- Physician lobbyist – serve as a volunteer lobbyist during the legislative session;
- SDSMA PAC – help friends of medicine become elected officials and lawmakers;
- SDSMA committees and task forces – serve the organization and yourself;
- SDSMA appointments to state boards, committees and commissions – the SDSMA is asked to nominate and recommend physicians to fill positions to numerous vacancies every year;
- Membership sections for medical students, residents, young physicians, and senior physicians – needs vary at different points throughout a physician’s career, and we need leaders at each stage; and
- Districts and specialty societies – local involvement introduces you to the process.

If you’d like to get involved, give us a call at 605.336.1965 or visit www.sdsma.org for more information.

“For Your Benefit” is the SDSMA’s monthly update on programs and services available to physicians through their affiliation with the SDSMA.
CME Events

Continuing Medical Education events which are being held throughout the United States (Category 1 CME credit available as listed)

**October 2013**

**Oct. 7**
Intruder Response  
8 a.m.-12 p.m.  
Ramkota Hotel  
Rapid City  
AM A PRA Category 1 Credit(s)™ available  
Register online: www.usd.edu/cm e

**Oct. 8**
Intruder Response  
Golden Buffalo Convention Center  
Lower Brule  
AM A PRA Category 1 Credit(s)™ available  
Register online: www.usd.edu/cm e

**Oct. 9**
Internal Medicine Grand Rounds:  
Quality!?  
12-1 p.m.  
Sanford School of Medicine HSC  
Room 106  
Sioux Falls  
AM A PRA Category 1 Credit(s)™ available  
Register online: www.usd.edu/cm e

**Oct. 10**
Pediatric Grand Rounds: Herbal  
Supplementation as a Proposed Cause of Infantile Bruising, a Case Review  
8-9 a.m.  
Sanford USD Medical Center Schroeder Auditorium  
Sioux Falls  
AM A PRA Category 1 Credit(s)™ available  
Register online: www.usd.edu/cm e

**Oct. 11**
Intruder Response  
8 a.m.-12 p.m.  
Events Center  
Watertown  
AM A PRA Category 1 Credit(s)™ available  
Register online: www.usd.edu/cm e

**October 2013**

**Nov. 22**
VA Medical CME Activity: Pharmacy  
Clinical Pearls II  
12-1 p.m.  
VA Medical Center Room 124  
Sioux Falls  
AM A PRA Category 1 Credit(s)™ available  
Register online: www.usd.edu/cm e

**November 2013**

**Oct. 24**
Surgery Grand Rounds: Orthopaedic  
Aspects of Multisystem Trauma  
6:30-7:30 a.m.  
Sanford USD Medical Center Schroeder Auditorium  
Sioux Falls  
AM A PRA Category 1 Credit(s)™ available  
Register online: www.usd.edu/cm e

**Oct. 25**
VA Medical CME Activity:  
Anti-inflammatory Diet  
12-1 p.m.  
VA Medical Center Room 124  
Sioux Falls  
AM A PRA Category 1 Credit(s)™ available  
Register online: www.usd.edu/cm e

**Oct. 28-29**
Mayo Clinic 87th Annual Clinical Reviews  
Mayo Civic Center  
Rochester  
AM A PRA Category 1 Credit(s)™ available  
Register online www.mayo.edu/cm e

**DO YOU HAVE A CME EVENT COMING UP? WOULD YOU LIKE TO HAVE IT LISTED HERE?**

**Contact:** Elizabeth Reiss,  
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Phone: 605.336.1965  
Fax: 605.274.3274  
E-mail: dtoay@sdsmma.org

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