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South Dakota Medicine
(ISSN 0038-3317)
Published 12 times per year with one special issue by the South Dakota State Medical Association.

Subscription price: $50 per year domestic $65 per year foreign, $8.95 for single copy

Periodicals postage paid at Sioux Falls, South Dakota and additional mailing offices.

Postmaster: Send address changes to South Dakota Medicine
2600 W. 49th Street, Suite 200
Sioux Falls, SD 57105

SDSMA Home Page: www.sdsmaint.org
AMA Home Page: www.ama-assn.org

Printer:
The Ovid Bell Press, Inc.
P.O. Box 370
Fulton, Missouri 65251-0370

Cover photo by Kerdall Remboldt,
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Taken on a cold morning at Canyon Lake in Rapid City, Canadian geese will run on the surface of the water for a short distance as they gain enough lift to become airborne.
Fall has arrived, and football season is upon us. The kids are going “back to school” or off to school for the first time. As a parent of a 19-month-old and a three-and-a-half-year-old daughter, it seems like we have plenty of time to save for future education goals. However, they grow up fast, and time seems to get away from us if we do not have a plan in place.

There are some amazing statistics about college graduates accumulating a large amount of student debt, a staggering $1.3 trillion and rising, with the current median student loan debt being $16,995. If you want to learn more about this epidemic, take a few minutes to view this film by Adam Carroll “Broke, Busted and Disgusted: College Debt Documentary.”

The goal for our children and grandchildren is to give them the best chance to succeed and to launch their careers with the least amount of student debt possible. Whether our current or future students receive scholarships, and/or have access to College Savings 529 accounts, they will need these resources to be on a strong path of avoiding the anchor of student loan debt.

Here are some items to consider when crafting your game plan for education funding that will provide you the highest probability of success:

Start saving and using funds early

Saving today for future education goals can make all the difference toward success. As of June 2018, in Iowa, your 529 account can be utilized for qualified K-12 tuition and education expenses at public, private, or religious schools up to $10,000 per year. Whether you are planning for expenses now or in the future, planning ahead for how much your student will need is important to understand.

Student loans

Repayment of student loans is NOT a qualified education expense for a 529 plan. Before a student applies for a student loan(s), plan accordingly knowing that student loans cannot be paid with 529 funds.

Scholarships

If your student receives a scholarship(s) and you find that their account is “overfunded,” you have options. The account owner has the right to transfer a 529 account balance(s) to an eligible family member. Second, a withdrawal can be made in the amount not to exceed the balance of the scholarship(s) received without penalty (10%). However, the pro-rata earnings amount will need to be included back in your income taxes. You will want to consult your tax advisor on any distribution.

Opening an account online is straightforward and can be completed in a matter of minutes. If you have questions about college expense projections and/or how much should/could you be contributing, feel free to contact us.
November is often associated with Thanksgiving Day— a day of the year that many of us celebrate and acknowledge the many things that we must be thankful for and spending time with our families. As I sat down to write this article, I thought I would share with you the many things that I often overlook but am truly thankful for each and every day. While biased, I am thankful for our state medical association. As president of the South Dakota State Medical Association (SDSMA), I have been granted the opportunity to meet the many amazing physicians and leaders in our state. This fall I’ve had the opportunity to participate in several presidential district visits. It is a fantastic opportunity to see the unique ways medicine is practiced in our different communities. It is also great to see old classmates and colleagues across the state. Visiting with physicians across the state reinforces the advocacy efforts of the SDSMA.

Allowing me to become involved in advocating and defining the practice of medicine in our state is another benefit of the SDSMA. As the 2019 Legislative Session is about to begin, the input and conversations with our members is extremely important. We have worked tirelessly on many issues over the years representing the best interests of physicians, patients, and South Dakota. Next year will be no different as we continue our efforts in the areas of prescription drug prices, telemedicine, smoking cessation, medical orders for life sustaining treatment (MOST), DUI, and prescription drug (i.e. opioid) diversion, addiction and abuse. While we do not condone driving while under the influence, the SDSMA will be working to introduce legislation to allow those under the age of 21 operate a motor vehicle after having consumed a lawfully prescribed controlled drug, provided the individual not incapable of driving safely. As proposed, this legislation will not prevent law enforcement from protecting the public by removing those from the road who are incapable of driving safely. We will also continue working with the state Department of Health in providing education for prescribers in our state— to date, we have educated numerous prescribers regarding responsible opiate prescribing and as a result we are seeing decreases in the total number of pills and prescriptions in South Dakota.

I am also very thankful for the University of South Dakota Sanford School of Medicine (USD SSOM). Many of us have received some or all of our training at USD SSOM. Twenty-one years ago, the school took a chance on a young kid from Huron. The education I received more than prepared me for residency and specialty training. As a freshman medical student, I could not have imagined the opportunities that lied ahead nor could I have foreseen the doors that would be opened because of that training.

For those who have graduated and/or are actively practicing medicine, USD SSOM allows physicians to become involved as clinical instructors. This is not only an important way to give back to the school but helps to shape and mold the future of medicine in South Dakota.

I am thankful for my mentors, partners and colleagues that I have had the opportunity to work with. Behind me is a spectacular team of nurses, clinical assistants, rad techs, schedulers, billers, coders, and support staff— who I could not function without.

I am thankful for those who put their trust in me and allow me the opportunity to help take care of them. They trust me with their most intimate secrets, their bodies, their physical and sometimes mental health, and their futures. In turn, they often they teach me much about humility, patience, and the human side of medicine.

And last but certainly not least, I am thankful for my family for their encouragement, support and ability to keep me grounded.

As I bring this article to a close, I certainly want to acknowledge the fact that there are trying days. Dealing with disease, difficult patients, third party payers, politics and electronic medical records is not easy and can wear down even the most dedicated physician. However, in saying that, I encourage you to stay grounded, be sure to take time for yourself and your loved ones, and when in doubt or having a difficult day, take a few minutes to think about the positive things in your life and all the things you are thankful for.
Joy in Practice

By David Ring, MD, PhD
Associate Dean for Comprehensive Care, Department of Surgery and Perioperative Care, Dell Medical School

Hand surgeons love to convey their expertise and apply their technical skill to help people get well. However, as the medical profession has become more highly regulated and transitions from volume to value the stresses of caring for our patients have increased. It’s no wonder the rate of so-called “burnout” is increasing in medicine and hand surgery is not immune. This syndrome is characterized by “emotional exhaustion,” “depersonalization,” and “a sense of reduced personal accomplishment.” This is meant to be used as a resource to mitigate against experiencing burnout by providing helpful resources to hand surgeons.

Billing for one’s services means increasing computerized documentation that can make a clinician feel like an “expensive financial clerk.” And often our expertise is not received as positively as we anticipate: disappointment that the a test is normal or shows expected age-related changes; an “all you have for me is advice” when we follow the data about which interventions are no better than resiliency and time; and complete lack of insight into how stress, distress, and less effective coping strategies are part of being health and recovering from injury or surgery. Patients often take a passive, “powerful other” approach that can leave us feeling like we are always letting them down. And those online reviews don’t help.

And now satisfaction is increasingly tied to money. All of this can leave one feeling that the daily practice of hand surgery is less meaningful. We can lose our purpose; our joy in practice.

Steps towards alternative payment models might alleviate some pain points, but they create so many more. Our habits are firmly in the fee-for-service realm and altering fixed habits is a challenge. Reorganizing our practice for a more comprehensive and coordinated approach is an investment that necessitates a clear financial payoff – another risk and discomfort. And the frequency of tricky conversations about low value tests and treatments will increase.

It’s important that each of us make the effort to care for ourselves. Make sure that each day’s work is meaningful and brings you joy. It will improve the quality of the care you deliver as it improves the quality of your life.

Here are some examples of great self-care resources, how to sense when to get more help, and where to reach out:

Steps Forward: AMA Program – https://www.stepsforward.org/modules/physician-burnout. This is an excellent set of modules that will increase your awareness and insight and provides useful everyday strategies for maintaining joy on practice.
Institute for Health Care Innovation’s (IHII) Module on Mindfulness – http://app.ihi.org/lmsspa/?utm_campaign=tw#e0210cb3-3732-41b7-b98ddc960f6eb856/98f72369-b608-4a51-8c4c-ecc242650ed3; the IHII has many useful training sessions. This one on self-care is very helpful.

Examples of wellness programs one can tap into –
Boston University Medical Center:
http://www.bumc.bu.edu/wellness/;

Harvard Medical School:
https://www.health.harvard.edu/mind-and-mood/rampup-your-resilience;

Stanford Medicine:
http://wellmd.stanford.edu/;

Coalition for Physician Wellbeing:
https://forphysicianwellbeing.org/

Tips for maintaining joy in practice: Make joyful practice a priority for your organization. Surround yourself with people that know how to make things enjoyable. Set up a manageable schedule and measures of success that feel right to you. Understand the human aspects of care: both the patient’s and yours. Develop your emotional intelligence and effective communication strategies. Take a genuine interest in each patient. Soothe not solve: people don’t care what you know until they know that you care. Get comfortable with incremental care: health improves over time. Find ways to relieve stress: e.g., scheduled and unscheduled breaks to do something revitalizing; work on process improvement and efficiencies; brief mindfulness exercises. Adopt a growth mindset: you will evolve and improve. Every day brings opportunities.

REFERENCES

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Genuine Patient-Centered Care

By Jerome W. Bentz, MD

To the Editor,

I commend Dr. Wendell Hoffman on his insightful and thought-provoking three-part series, The Patient as Reformation. I want to point out that both of his reformation heroes (Martin Luther and Martin Luther King, Jr.) were pastors. As pastors they believed in an omnipotent creator God and in the authority of the divine inspired Word of God – the Bible. From this inspired Word of God springs our Judeo-Christian ethic which proclaims that human life is valuable because we’re created in God’s image. In the Bible Jesus tells us to “Love our neighbor as ourselves.” We’re admonished to care for the sick, thirsty, hungry, etc. Both reformers started from the solid foundation and legitimate authority of God’s revealed Word: Martin Luther questioned the beliefs and actions of the Holy Roman Empire and MLK advocated for racial equality and social reform.

The patient-centered care approach stands on the legitimate authority of the Judeo-Christian ethic that values human life and believes in a God who loves us, but will also hold us accountable for our words and actions. As our society gradually slides down to a human-centered secular society (that believes we are the product of the impersonal plus time plus chance) this Christian ethic will be replaced with human-centered opinions. They have no foundation except any currently popular changing opinions of man. These opinions will change depending on what is popular and who has power.

For example, consider Nazi Germany trying to create the perfect Aryan race at the expense of the Jews and (in their opinion) other less desirable races. Or maybe the defining factor might be monetary gain (consider big pharma pleasing its stockholders). Profit becomes more important than patient well-being. Or maybe it will be utilitarianism – the greatest good for the greatest numbers. In this instance the weak, disabled, elderly, and poor would be considered dispensable for the greater good.

My point is that both these reformers were standing on the solid foundation of God’s revealed Word (and not on the shifting sands of human opinion). Genuine patient-centered care naturally proceeds from this Judeo-Christian ethic. We should protect and preserve this ethic as we try to transform and reform our broken system.

About the Author: Jerome W. Bentz, MD, Geriatrics and Family Medicine Physician, Platte Medical Clinic Avera, Platte, South Dakota.

Moral Injury – Fides et Ratio – Out in the Open

A response from Wendell W. Hoffman, MD

I would like to express my sincere gratitude to Dr. Erica Schipper and Dr. Jerome Bentz for their responses to The Patient as Reformation – Here We Stand series. Their contributions are crucial and others should follow their lead and weigh in on the state of our profession. The self-evident truth of patient-centeredness as the metanarrative for transformational healthcare reform must be told – and together Dr. Schipper and Dr. Bentz have called the question.

In A Breath of Hope,¹ Dr. Schipper’s powerful descriptors – including, “Many of us today are frustrated...”, “We
grow weary…”, “We tire…”, “We are exhausted…”, “…we have been reduced to a cog,” could well describe a phenomena that has gained enormous attention in the past few years – burnout. While an entire picture of physician burnout is not clear, I wonder if Dr. Schipper is not exposing its major cause, one which physicians rarely discuss out in the open. Recently, Drs. Talbot and Dean identified this as “moral injury.” Their argument is worth quoting at length, “We believe that burnout is itself a symptom of something larger: our broken health care system. The increasingly complex web of providers’ highly conflicted allegiances — to patients, to self, and to employers — and its attendant moral injury may be driving the health care ecosystem to a tipping point and causing the collapse of resilience. The term ‘moral injury’ was first used to describe soldiers’ responses to their actions in war. It represents ‘perpetrating, failing to prevent, bearing witness to, or learning about acts that transgress deeply held moral beliefs and expectations.’…The moral injury of health care is not the offense of killing another human in the context of war. It is being unable to provide high-quality care and healing in the context of health care.” (emphasis mine). Despite this challenge, Dr. Schipper finds hope in our “true focus…the patient.”

In Genuine Patient-centered Care, Dr. Bentz brings forward another rarely discussed subject – the role of faith in the formation and delivery of healthcare. This is painfully ironic given that so much of medicine owes its very roots to faith-based movements. But we should not be surprised, given that in the broader culture, the principle of “separation of church and state” has slowly morphed into separation of faith from the public square – with faith being privatized and therefore thought inferior in matters of public policy. In our scientific method dominant industry we too have not treated these worldviews as legitimate public knowledge – to be explored, explained and applied – favoring so-called “reason” over “faith.” Thankfully this seems to be changing, as we come to the realization that the scientific method, (notwithstanding all of its seminal contributions), is not nearly as objective or ultimate as was once assumed – and so is limited and incomplete. There was, in fact, enlightenment before the “Age of Enlightenment” and this deep knowledge represents things that we can’t not know – like the knowledge of our obligation to the best interest of the patient. The most succinct way of illustrating this comes both in past proclamation and present example. Pope St. John Paul II famously stated, in his influential Fides et Ratio that, “Faith and reason are like two wings on which the human spirit rises to the contemplation of truth…” The greatest among us have built entire enterprises on this whole minded human quest. For instance, the Mayo Clinic’s founder Dr. William Worrall Mayo was an agnostic, but when approached by Mother Mary Alfred Moes, of the Sisters of St. Francis, following a disastrous F5 (estimated) tornado in Rochester, Minnesota, in 1883, he responded. Together they formed St. Mary’s Hospital six years later, perennially one of the premier hospitals in the world. And, as per the recent PBS documentary, The Mayo Clinic: Faith, Hope, Science, the rest is history. Apparently neither saw a conflict between faith and reason – nor does Dr. Bentz. Nor should we.

The question called is whether a causal relationship exists between Fides et Ratio and Moral Injury. With the god of empiricism whispering in one ear and corporate growth in the other, one can almost hear the hollow answer, “We need more studies.” But the self-evident “together” of Moes/ Mayo cuts through the noise and declares, “All together or none at all.”

About the Author: Wendell W. Hoffman, MD, Sanford Clinic – Infectious Disease; Clinical Professor of Medicine, University of South Dakota Sanford School of Medicine, Sioux Falls, South Dakota.

REFERENCES

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A Qualitative Study of Hutterites’ Perspectives and Attitudes Toward Healthcare Providers

By Janice Baumberger, MS III; and Barbara Yutrzenka, PhD

Abstract
As the U.S. becomes more diverse, so does the population presenting to healthcare providers. As a result, cultural competency has become a vital aspect of healthcare in the U.S. Providers need to understand not only how their treatments are appropriate for a specific cultural group, but also how they can most effectively communicate with and establish relationships with these patients. One of the distinct cultural groups living in South Dakota are the Hutterites. While members of the Hutterite colonies use mainstream medical facilities for their health care, there is little information about the preparation of mainstream healthcare providers for the culture of this group and how this preparation may impact the services they provide to Hutterites. The purpose of this phenomenological study was to understand Hutterites’ experiences with healthcare providers. Individual interviews were conducted with eight adults from a local Hutterite colony who had experience with mainstream healthcare providers. The qualitative analysis of these interviews resulted in two major themes: issues of healthcare culture and use of medical services only when needed. Certain aspects of Hutterite culture should be acknowledged when they present for medical treatment.

Introduction
Over the past few decades, the U.S. has experienced a growth in ethnic and racial minority populations. It follows that as the U.S. becomes more culturally and ethnically diverse, patients seeking services from healthcare providers also become more diverse. This leads to the need for healthcare providers to become aware of the cultural diversity of the patients they serve. Cultural competence of a healthcare provider incorporates three key components: cultural awareness, cultural knowledge, and skills to work within the cultural context of a client or patient.1

There are many groups to be aware of when striving to be culturally competent. In South Dakota, some of the major "minority" groups include Native Americans (Lakota, Nakota, Dakota Sioux tribes), Latinos (primarily Hispanic), and Hutterites. The Hutterites in South Dakota are a specific group of Anabaptists who are the focus of this study. The Hutterites have been living in South Dakota since 1874, and number over 6,000.2,3 Due to this large population of Hutterites, it is important for healthcare providers to be aware of their culture when providing treatment.

The Hutterites have their origin in Europe in the Anabaptist movement of the 1500s.3 Anabaptists believe in adult baptism, communal living and the rejection of violence. Persecution by many churches in Europe forced the Hutterites to move to America, where their religious freedom was guaranteed by Gov. Jayne of the Dakota Territory.

A colony is a self-sustaining community of 75-150 Hutterites. Each colony has a governing body, called the Council of Elders, consisting of five to seven baptized males who oversee all aspects of life in the colony. Hutterite colonies are typically very advanced agriculturally because they embrace modern technology and are able to produce large amounts of product. Technology is only allowed for economic use, not for pleasure. The colony facilitates the Hutterites’ strong beliefs in nonviolence, isolation, and nonconformity. The religious colonies are
isolated from the outside world and repeated exposure to worldly ways is frowned upon. This results in a very cohesive, isolated community which is influenced immensely by a set of strong religious beliefs. Hutterites believe in one God, and Jesus Christ as savior. Male dominance is expected according to the creation story, and a man must be obedient to his community as a woman should be obedient to her husband.4

Religious beliefs are essential for the sustainability of a Hutterite colony. Hutterites believe that their literal interpretation of the Bible is the direct expression of the will of God.7 They live according to Acts 2:44 and 45 in the Holy Bible, “What is mine is thine…and all that believed were together and had all things in common.” All money made in a colony is pooled; there is no individual wealth. The minister and farm boss on the Council of Elders determine who can use the community’s money and for what purpose. Another aspect of communal living relates to payment for healthcare. If a member of a Hutterite colony needs to visit the doctor for a medical issue, he/she can request to use the colony money for the medical bills. The minister determines whether it is a valid reason for spending the communal money.

As of note for the current study, Hutterites embrace modern technology, and they also accept modern medicine. According to their religion, Hutterites should spend their life serving God on the colony. If a Hutterite is ill and cannot work to please God, he/she should be cured of their ailment in order to return to work. However, regarding preventative care: “If there is no problem, then why pay for it?” There are some health issues typically addressed within the colony, while others require healthcare outside of the colony.

Hutterites may seem to be a completely self-sustaining community, but due to education restrictions, they are not. A Hutterite is sent to German, English, and Sunday school until age 18. After completing school at age 18, Hutterites enter the work force and it is not common to go on to more formal education. Hutterite colonies do not have physicians or dentists within the colony because the training for these professions would have to occur outside of the colony. Hutterites have formed a working relationship with doctors of the outside world when medical or dental treatment is needed.

While the tradition is for the Hutterite colony to be as self-sufficient as possible, taking care of the needs of its members within the colony, the need for outside medical treatment of the Hutterite colonies requires the Hutterites to interact with the outside world. The quality of these interactions and the quality of care they receive may be directly linked to the cultural competence of their healthcare provider. However, this link has not been established in the research or clinical literature to date. This study attempts to provide this information in a culturally sensitive approach using qualitative methodology to explore the experiences of Hutterites with mainstream healthcare providers.

The present study utilized a phenomenological method to describe the experiences of members of a local Hutterite colony with healthcare providers. The best way to understand what a typical appointment with a healthcare provider is like is to ask the participant to describe the experience in their own words.

Materials and Methods

The participants in this study were members of a local Hutterite colony located in southeast South Dakota. After receiving approval from the Institutional Review Board (IRB), the researcher visited the colony and invited the participation of men and women members of the colony who were at least 18 years old. Initial contact with the colony was through the head minister of the colony.

The researcher’s goal was to interview at least ten participants individually for this study or fewer if saturation was achieved prior to that number. Eight members of the local colony volunteered to be interviewed. All met the inclusion criteria: (1) they were at least 18 years old, (2) they were members of the colony and (3) they had previous experience with healthcare providers. Saturation was achieved with these eight interviews due to common cultural values and communal community characteristics of this colony. Saturation occurs when the same information is repeated by multiple participants, and no new information is emerging.

The researcher conducted all interviews, and a second member of the advisor’s research team was present to assist with note taking during the interviews. The transcriber was a first-year clinical psychology doctoral student who had past experience with qualitative research, and more specifically, with taking notes during research interviews. Participants were asked the grand tour question, “What
kinds of experiences have you had with healthcare providers outside of your colony?” as the key focus of the interviews. Related sub-questions attempted to explore the positive and negative aspects of their interactions with healthcare providers.

Following each interview, “significant statements” or quotes that provided a good understanding of the participant’s experience were identified using Moustakas’ description of the phenomenological method of qualitative methods. The researcher developed groups of meaning from these statements to categorize them into themes. These statements would then be used to construct a description of what the participant’s experience was and to describe the context that influenced how participants experienced care from the healthcare provider. Finally, the descriptions were used to write an overall description that presents the core of managing healthcare relationships.

The American Psychological Association’s ethical codes and guidelines were followed to avoid harm or deception of the participants. The University of South Dakota’s IRB approved the original study plan as well as the amendment involving a change in the procedures that accommodated the minister’s wishes (written transcripts versus tape recordings of the interviews).

The participants were asked to read and comprehend a consent form explaining risks, benefits, and the purpose of the study. The participants were informed that they were free to terminate the interview at any time.

Results
Eight members of the Hutterite colony volunteered to be interviewed. This included six women and two men. The age range was 20 to 70 years, with a mean age of 42 years. All participants had some experience with healthcare providers at some point in their life.

Two main themes with various subthemes emerged from the interview data: (1) use of medical services only when needed and (2) issues of healthcare culture. These two themes and subthemes are diagrammed in Figure 1. Exemplar quotations from participants are used to support the themes in Table 1.

The use of medical services only when needed was a theme mentioned by every participant interviewed. This

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**Figure 1. Core themes of Hutterites’ experience with healthcare providers**

- **CORE THEME 1.** Use of medical services only when needed
  - Familiarity with culture
  - Perceptions of medical care
- **CORE THEME 2.** Issues of healthcare culture
  - Frustration with long waiting periods
  - Preference of treatment other than just pills
  - General satisfaction with providers
is consistent with information found in the literature review. “Familiarity with culture” could be considered a direct result of “use of medical services only when needed.” When asked how often they see a doctor, a common answer among the participants was once per year. Some participants didn’t even go once per year, but rather less if they didn’t need it. It would be very difficult for a healthcare provider to be familiar with the culture of someone who they may only see for fifteen minutes per year, unless a significant effort was made to understand the culture.

Four of the eight participants mentioned frustration with long waiting periods at their local clinic. This theme is put under the larger theme of “use of medical services only when needed” because this infrequency of medical visits could impact the sense of waiting period duration. If Hutterites are only going to the doctor in emergency type situations or when they really need it, the waiting period may seem unbearable because of the urgency of the condition.

Homeopathic medicine and less use of medication is a preference by Hutterites as demonstrated by significant statements by two participants in Table 1. It is important

<table>
<thead>
<tr>
<th>Theme</th>
<th>Significant Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Use of medical services only when needed</strong></td>
<td>“I want them to respect that I only go to the doctor when I feel I need to.” “I didn’t take all my appointments when I was pregnant, the doctor was twenty miles away. The doctor wanted me to come once per week but I thought that was too much. I went to the doctor when I felt like it.” “I never go to the doctor just for a checkup, only if I have a reason.”</td>
</tr>
<tr>
<td><strong>Familiarity with culture</strong></td>
<td>“My local clinic is especially familiar because not just us but other colonies go there. They don’t necessarily know what we do on a daily basis. Some ask about daily life, but they wouldn’t know our cycle of life.”</td>
</tr>
<tr>
<td><strong>Frustration with long waiting periods</strong></td>
<td>“The patients don’t get to care fast enough, especially in emergencies . . . we have waited hours for service at our local clinic.” “It took them three days until they did an x-ray. He had to stay at the local clinic until Sunday. They didn’t treat him for all those three days. After three days, my aunt demanded the x-ray. After the x-ray, they took him to Sioux Falls. They didn’t say why they didn’t treat him.”</td>
</tr>
<tr>
<td><strong>Preference of treatment other than just pills</strong></td>
<td>“I don’t expect much from my local clinic, it’s not Rochester. In Rochester, they talk it over. At the local clinic, they just write scripts for a bunch of pills. When I take too many pills, I feel like a robot.” “I prefer herbs to drugs. The homeopathic doctor is working and helping.”</td>
</tr>
<tr>
<td><strong>Issues of healthcare culture</strong></td>
<td>“I went to the doctor more often during pregnancies. In some cases, I wouldn’t know what was going on. I didn’t understand when the doctor was explaining procedures.” “There is a problem with the education level. Many people have problems understanding the doctor or explaining what’s wrong. Other people have asked me to describe their symptoms to the doctor.”</td>
</tr>
<tr>
<td><strong>Perceptions of medical care</strong></td>
<td>“At a local clinic, they didn’t take very good care of a lady from the colony. The doctors treated her too quickly. Her husband asked them about this and they banned him from the hospital. The doctors gave them the wrong pills.” “My grandpa broke his hip and laid in the hospital in pain for three and a half days, Thursday night through Sunday morning. It was three weeks ago. His daughter insisted on doing something, so they did an x-ray and took him to Sioux Falls. They found out that he had a disease on his bone. There were doctors present those three days but they just gave him pain pills and never explained anything.”</td>
</tr>
<tr>
<td><strong>General satisfaction with providers</strong></td>
<td>“A doctor should never laugh something off. I had a really deep cut in my finger and the doctor laughed it off. I was humiliated and never would go back. I could feel that there was something wrong with my finger because there was a lot of pain.” “The doctors should listen to the patient because every patient needs their own help. They should treat each patient individually.”</td>
</tr>
</tbody>
</table>
that a medical provider is aware of homeopathic medicine and interactions in their Hutterite patients.

Essential to healthcare is the ability of a provider to effectively explain medical procedure and culture to his/her patient. Issues of healthcare culture was a theme mentioned by four participants. These issues of healthcare culture resulted from lack of communication and different perceptions of medical care.

When the healthcare provider and patient did not share perceptions of medical care, some participants believed that they were not given the correct pills/treatment. Participant three and two describe situations when these differing perceptions of medical care resulted in negative outcomes as seen in Table 1.

It will take more effort to explain medical issues to someone with no experience in medical culture, but this effort is something essential for Hutterites. Patients may not be able to effectively convey symptoms and the amount of pain they are experiencing, leading to providers doubting the seriousness of the medical problem. This is demonstrated by a participant in Table 1 under “general satisfaction with providers.”

Conclusions

Some limitations to this study include possible lack of generalizability due to interviews in only one colony, convenience sampling, sampling from the same immediate family, and written as opposed to audiotaped transcripts. Also, it is important to note that there was some limitation in understanding due to the language barrier.

Healthcare providers should be advised that someone from a Hutterite colony is very unlikely to come in to the clinic other than when they need immediate medical treatment. Recognizing the prevalence of urgency in these visits is essential. There may be some frustration due to lack of preventative care in the Hutterite population. However, it is possible that a provider who improves his/her cultural competency could increase their Hutterite patients’ use of preventative care. A systematic review of the literature on cultural competency showed strong evidence of an increase in preventative care and keeping appointments for diverse cultures. 7-10 If preventative care is indeed not possible, it is advisable to find ways outside of appointments to maintain Hutterites’ health.

I would advise healthcare providers to spend more time with a Hutterite patient during appointments. It is important to repeat things back to them to ensure that technical terms are understood by the patient. Hutterites are very agreeable people and may not interrupt a physician for clarification. In order to provide optimal care, symptoms and treatment should be clarified extensively. This includes specific attention to possible home remedies that may be used in higher prevalence in this population according to the data.

For sufficient care, it is vital that a patient is able to communicate symptoms effectively. Although the Hutterites are bilingual, English is their second language and they speak it rarely. Communication in English is greatly limited for many members of the Hutterite colony, especially those who did not continue their English education past eighth grade. Miscommunication of symptoms to the healthcare provider could result in many things, including a misdiagnosis.

As stated earlier in this paper, cultural competence is of utmost importance in healthcare, and the Hutterites are no exception. As a result of this study, I am convinced that efforts should be made to develop training materials for providing culturally competent healthcare services to members of Hutterite colonies. This is a unique population in South Dakota, and limited literature exists to guide practitioners in their medical care.

References


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Barbara Kutzenka, PhD, University of South Dakota Sanford School of Medicine.
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Descriptive Study of Rubella Titer Status in Infertility Patients

By Jennifer L. Keating, MD; Keith Hansen, MD; and Tiffany Von Wald, MD, MPH

Abstract

Introduction: There is a 6.4 percent incidence of rubella exposure during pregnancy in the U.S. Given the severe effects rubella can have on a developing fetus, vaccination of women prior to pregnancy is important. Women seeking fertility treatment therefore present a population of patients primed for the vaccination. This study collected and analyzed rubella-specific immunoglobulin G (RV-IgG) titer statuses and corresponding demographics of infertility patients to identify patients at risk of rubella nonimmunity.

Methods: The study consisted of a retrospective review of electronic medical records (EMR) of female patients, ages 18 to 50, who were new patients receiving an infertility workup at a Midwestern reproductive endocrinology clinic from Jan. 1, 2010 through Dec. 31, 2014. Of those patients who had RV-IgG titers noted in their EMR, the following demographics were collected: age, race, gravidity and parity, state of residence, and community size.

Results: There were 750 patients included in the study. Rubella titers were drawn on 72.7 percent of the patients. Of those drawn, 90.8 percent had a positive rubella titer. Most of the participants (92.3 percent) were identified as Caucasian/White. Caucasians/Whites, Asians, and African Americans/Blacks had the highest rates of rubella immunity, while American Indians/Alaskan Natives had the lowest rates of immunity (p=0.0006). Nulligravida participants had a positive rubella titer rate of 94.1 percent, while primigravida participants had a rate of 89.8 percent (p=0.04). Participants living in the largest sampled communities had the lowest rates of positive rubella titers, while those living in the smallest communities had the highest rates of positive rubella titers, although these findings were not statistically significant.

Conclusions: Of the infertility patients, 27.3 percent did not have an RV-IgG titer drawn as part of their fertility workup. Of the 72.7 percent of patients for whom titers were checked, nearly 10 percent were not immune to rubella. While there are a couple reasons why a patient may not have a positive titer, lack of immunization is the most common reason. Data analysis identified significance in the difference in titer status only with respect to race and gravidity, and those findings, particularly race, must be viewed critically in light of the study population. While the statistical significance of the study may be limited, there is clinical significance in identifying infertility patients at highest risk of rubella nonimmunity so vaccination education and efforts can be focused accordingly.

Background

Increased awareness of the consequences of not vaccinating have resurfaced in light of recent outbreaks of diseases once thought eradicated in the U.S. One such disease is rubella, which has effects relatively innocuous in the general population, but are more severe, with long-term repercussions, to a developing fetus. In such cases, rubella can cause fetal death, if exposure occurs in the first trimester. If exposure occurs later in the pregnancy, cataracts, cardiac abnormalities, sensorineural deafness, and various other potential abnormalities are seen.1,2
It is estimated that 9-14 percent of U.S. women are rubella nonimmune at their first prenatal visit. A 2014 Texas study found that this same population of women has a 6.4 percent incidence rate of rubella exposure during pregnancy. Women of childbearing age have the potential of contracting rubella during pregnancy and carrying offspring subjected to the effects of the infection.

The rubella vaccine was first developed in 1969 and has since been deemed to be highly effective. It is a live vaccination, administered in a 2-dose series. It has a greater than 95 percent antibody response rate after the first dose and nearly 100 percent response rate after the second. In areas with vaccination programs, the series is typically administered prior to the recipient attaining 24 months of age. While rubella can be contracted year round, its occurrence rate is highest during the spring months and mainly affects children ages 5 to 9 in geographical areas lacking vaccination programs.

Administration of the live vaccination during pregnancy (or the month prior to conception) has a theoretical risk of having the aforementioned teratogenic effects on the fetus. While vaccination during these times is not recommended, it may be safely administered postpartum, including to mothers who are breastfeeding. In instances of inadvertent rubella vaccination during pregnancy, however, there have been no reported cases of congenital abnormality. Obtaining a rubella virus-specific immunoglobulin G (RV-IgG) titer on women of childbearing age prior to conception is ideal as it provides a window to offer and administer the vaccination to the at-risk population, while not placing a current or future pregnancy in theoretical risk. A subset of this at-risk population is women struggling with infertility who seek medical assistance due to their inability to achieve pregnancy.

Identifying women who are planning pregnancy, but are not yet vaccinated, creates an opportunity to offer potential protection to their future offspring. Accordingly, the focus of this research was to collect RV-IgG titer statuses and demographical data of women seeking medical assistance regarding their inability to achieve pregnancy. While research has been conducted on the rubella immunity status of infertility patients, it did not focus on demographic characteristics of the study participants. By analyzing demographic characteristics in light of a patient’s RV-IgG titer status, it is hoped that providers can better identify and focus on those patients at highest risk.

Methods
The study entailed a retrospective review of the electronic medical records (EMR) of female patients, ages 18 to 50 years old, who were new patients receiving an infertility workup at a Midwestern reproductive endocrinology clinic during the time period of Jan. 1, 2010 through Dec. 31, 2014. These criteria were satisfied by 750 patients. Demographic data, including age, race, gravidity and parity, state of residence, and community size, were abstracted from their records.

Patient RV-IgG antibody levels, as determined by LIAISON Analyzer or VITROS Immunodiagnostic System technology, were also collected. A positive or negative test was based on antibody cutoff levels determined by the manufacturer. The LIAISON Analyzer assay had a sensitivity of 97.6 percent and specificity of 100 percent. The VITROS Immunodiagnostic System had a sensitivity of 98.8 percent and specificity of 100 percent. For purposes of the study, a positive test indicated that the patient had rubella immunity (whether from active or passive immunity), while a negative test meant that the patient lacked immunity.

The abstracted demographic and RV-IgG titer data of the study participants were collected by completing a query with the EMR. If a datum was missing, it was identified as “unknown” or “declined” in the data set. The data were compiled using MS Excel software and statistically analyzed using SAS v 9.4. Continuous variables (i.e., age) were compared using t-tests. Discrete variables were compared using χ² tests of differences in proportion in multicotomous variables. The analyses were deemed to be statistically significant when p < 0.05.

Results
Of the 750 patients who satisfied the study’s primary inclusion criteria, 545 participants (72.7 percent) had rubella titers drawn. Of those patients, 495 (90.8 percent) had a positive rubella titer, while 50 (9.2 percent) had a negative titer and thus were deemed to be rubella nonimmune. The study evaluated these data with regard to age, race, gravidity and parity, state of residence, and community population of the study participants. The data are summarized in Table 1.

Age
The study participants had an overall mean age of 30.9. As indicated in Table 1, the difference in titer status with respect to age was not significant (p=0.3230).
Race
Table 1 identifies the racial demographics of the participants. The difference in positive and negative titer status based on race was significant ($p=0.0006$). The number of participants who identified as a race other than White/Caucasian, however, was limited.

Gravidity and Parity
Titer status with respect to gravidity is significant ($p=0.0422$), while it is not with respect to parity ($p=0.7305$). Tables 2 (gravidity) and 3 (parity) identify titer status as it relates within each subcategory. Nulligravida and nulliparous participants had the highest

### Table 1. Summary statistics for rubella titer status

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Total</th>
<th>Positive Titer</th>
<th>Negative Titer</th>
<th>$p$(diff)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>n = 545</td>
<td>n = 495</td>
<td>n = 50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>30.48±4.74</td>
<td>29.78±4.95</td>
<td>0.3230</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>AA/Black</td>
<td>12(2.2%)</td>
<td>12(2.4%)</td>
<td>0(0.0%)</td>
<td>0.0006</td>
</tr>
<tr>
<td></td>
<td>A. Indian/A. Native</td>
<td>17(3.1%)</td>
<td>11(2.2%)</td>
<td>6(12.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Asian</td>
<td>11(2.0%)</td>
<td>10(2.0%)</td>
<td>1(2.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cauc/White</td>
<td>503(92.3%)</td>
<td>461(93.1%)</td>
<td>42(84.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Declined</td>
<td>2(0.4%)</td>
<td>1(0.2%)</td>
<td>1(2.0%)</td>
<td></td>
</tr>
<tr>
<td>Gravidity</td>
<td>0</td>
<td>85(15.6%)</td>
<td>80(16.2%)</td>
<td>5(10.0%)</td>
<td>0.0422</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>156(28.6%)</td>
<td>14128.5%)</td>
<td>15(30.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2-4</td>
<td>219(40.2%)</td>
<td>201(40.6%)</td>
<td>18(36.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5+</td>
<td>34(6.2%)</td>
<td>26(5.3%)</td>
<td>8(16.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unknown</td>
<td>51(9.4%)</td>
<td>47(9.5%)</td>
<td>4(8.0%)</td>
<td></td>
</tr>
<tr>
<td>Parity</td>
<td>0</td>
<td>148(27.2%)</td>
<td>136(27.5%)</td>
<td>12(24.0%)</td>
<td>0.7305</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>170(31.2%)</td>
<td>155(31.3%)</td>
<td>15(30.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2-4</td>
<td>100(18.3%)</td>
<td>88(17.8%)</td>
<td>12(24.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5+</td>
<td>5(0.9%)</td>
<td>4(0.8%)</td>
<td>1(2.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unknown</td>
<td>122(22.4%)</td>
<td>112(22.6%)</td>
<td>10(20.0%)</td>
<td></td>
</tr>
<tr>
<td>State</td>
<td>South Dakota</td>
<td>309(56.7%)</td>
<td>281(56.0%)</td>
<td>28(56.0%)</td>
<td>0.9515</td>
</tr>
<tr>
<td></td>
<td>Minnesota</td>
<td>130(23.9%)</td>
<td>117(23.6%)</td>
<td>13(26.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Iowa</td>
<td>51(9.4%)</td>
<td>47(9.5%)</td>
<td>4(8.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>North Dakota</td>
<td>44(8.1%)</td>
<td>40(8.1%)</td>
<td>4(8.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nebraska</td>
<td>6(1.1%)</td>
<td>5(1.0%)</td>
<td>1(2.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other States</td>
<td>5(0.9%)</td>
<td>5(1.0%)</td>
<td>0(0.0%)</td>
<td></td>
</tr>
<tr>
<td>City Population</td>
<td>1-999</td>
<td>122(22.4%)</td>
<td>114(23.0%)</td>
<td>8(16.0%)</td>
<td>0.6866</td>
</tr>
<tr>
<td></td>
<td>1,000-9,999</td>
<td>149(27.3%)</td>
<td>135(27.3%)</td>
<td>14(28.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10,000-19,999</td>
<td>68(12.5%)</td>
<td>63(12.7%)</td>
<td>5(10.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20,000-49,999</td>
<td>46(8.4%)</td>
<td>41(8.3%)</td>
<td>5(10.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>50,000+</td>
<td>160(29.4%)</td>
<td>142(28.7%)</td>
<td>18(36.0%)</td>
<td></td>
</tr>
</tbody>
</table>
percentage of positive rubella titers. When comparing nulligravida participants to participants carrying five or more pregnancies, there was a 17.6 percent decline in the percentage of multigravida participants who had positive rubella titers. A similar decline in positive rubella titers was observed with increasing parity as well.

State of Residence
The participants primarily resided in South Dakota, Minnesota, Iowa, North Dakota, and Nebraska. A small percentage of participants resided in Massachusetts, Nevada, Ohio, Illinois, Wisconsin, or Colorado (collectively, “other states”). As described in Table 1, the difference in titer status as it related to state of residence did not carry significance (p=0.9515). Table 4 shows titer status within each state respectively.

Community Population
The respective populations of the communities in which the study participants resided are described in Table 1 and Table 5. As noted in Table 1, the difference in titer status was not significant with respect to community size (p=0.6866). The percentage of positive rubella titers, however, generally carried an inverse relationship to community size – the larger the community, the lower the percentage of positive titers, as described in Table 5.

Discussion
The study population had an RV-IgG titer draw rate of 72.7 percent, with 90.8 percent of those bearing a positive titer. More than one out of every four participants were not screened for rubella during their infertility workup. Based on the screening results, it can be presumed that nearly one-tenth of those untested participants was similarly rubella non-immune.

This population of patients, however, presents some barriers to obtaining a 100 percent titer draw rate. For example, in the event a patient has a negative titer, it is recommended that she postpone pregnancy by at least one month after administration of the vaccine. In such case, the patient may decline the screening test altogether to avoid a potential delay in her infertility treatment and potential achievement of pregnancy. Additionally, patients may decline the test for financial reasons or because they believe it is superfluous. Regardless of the reason, the results identify an opportunity for patient education with the goal of increasing the RV-IgG titer draw rate and vaccination/booster rate in this population.

Statistical analysis of the demographic data identified significance in the difference in titer status only with respect to race and gravidity. The racial demographics showed that over 90 percent of the participants were Caucasian or White, and over 90 percent of those participants had positive titers. Interestingly, less than two-thirds of the participants who identified as Native American or Alaskan Native had a positive titer.

<table>
<thead>
<tr>
<th>Gravidity</th>
<th>Positive Titer</th>
<th>Negative Titer</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>94.1%</td>
<td>5.9%</td>
</tr>
<tr>
<td>1</td>
<td>90.4%</td>
<td>9.6%</td>
</tr>
<tr>
<td>2-4</td>
<td>91.8%</td>
<td>8.2%</td>
</tr>
<tr>
<td>5+</td>
<td>76.5%</td>
<td>23.5%</td>
</tr>
<tr>
<td>Unk</td>
<td>92.2%</td>
<td>7.8%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parity</th>
<th>Positive Titer</th>
<th>Negative Titer</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>91.9%</td>
<td>8.1%</td>
</tr>
<tr>
<td>1</td>
<td>91.2%</td>
<td>8.8%</td>
</tr>
<tr>
<td>2-4</td>
<td>88.0%</td>
<td>12.0%</td>
</tr>
<tr>
<td>5+</td>
<td>80.0%</td>
<td>20.0%</td>
</tr>
<tr>
<td>Unk</td>
<td>91.8%</td>
<td>8.2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>State</th>
<th>Positive Titer</th>
<th>Negative Titer</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Dakota</td>
<td>90.6%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>90.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Iowa</td>
<td>92.2%</td>
<td>7.8%</td>
</tr>
<tr>
<td>North Dakota</td>
<td>90.9%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Nebraska</td>
<td>83.3%</td>
<td>16.7%</td>
</tr>
<tr>
<td>Other states</td>
<td>100.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Population</th>
<th>Positive Titer</th>
<th>Negative Titer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-999</td>
<td>93.4%</td>
<td>6.6%</td>
</tr>
<tr>
<td>1,000-9,999</td>
<td>90.6%</td>
<td>9.4%</td>
</tr>
<tr>
<td>10,000-19,999</td>
<td>92.6%</td>
<td>7.4%</td>
</tr>
<tr>
<td>20,000-49,999</td>
<td>89.1%</td>
<td>10.9%</td>
</tr>
<tr>
<td>50,000+</td>
<td>88.8%</td>
<td>11.2%</td>
</tr>
</tbody>
</table>
According to the 2015 U.S. Census, 9 percent of South Dakota's population identifies as Native American or Alaskan Native, as compared to the 1.3 percent of citizens who identify with these racial groups nationally. This patient subgroup experiences increased perinatal and infant morbidity and mortality due to inadequate prenatal care. As such, vaccination efforts of Native American and Alaskan Natives in South Dakota could be increased to protect the health of future pregnancies in these patients. The other racial groups had positive titer rates that aligned with or exceeded the rate for the study population as a whole, as well as national averages.

With respect to the participants’ gravidity status, the percentage of positive RV-IgG titers, in general, declined with increasing gravidity. This is an interesting finding because it is standard in the U.S. to test RV-IgG at a patient’s first prenatal visit and offer postpartum immunization to non-immune patients. With an increasing number of opportunities to test, one would think that the rate of positive RV-IgG titers would likewise increase, but that assumes that these participants were not only tested, but also vaccinated or received a booster after detection of a negative RV-IgG titer. Understandably, these results are likely confounded by age and time from the patient’s initial vaccination. Nonetheless, these results may provide an opportunity for increased educational and vaccination efforts for those with increasing gravidity. Since breastfeeding is not a contraindication to rubella vaccination during the postpartum period, vaccination following delivery would be an ideal time to increase protection against potential rubella infection in future pregnancies.

The study has some limitations. Given that more than 90 percent of the participants were Caucasian or White, the external validity of the study is limited. The statistical analysis of titer status and race carried a p value of less than 0.05, but only 17 of the 545 patients identified as Native American/Alaskan Native. Therefore, the statistical significance of this association may carry limited value. The titer draw rate of 72.7 percent must be viewed critically as well. Patients may seek care from an obstetrician/gynecologist or reproductive endocrinologist at any point in their infertility workup and treatment. Some of the patients may have already begun their infertility workup, including obtaining an RV-IgG titer, with a provider at a clinic other than the one subject to this research. If that workup was started before transferring care to this clinic, another titer may not have been obtained simply because it was not needed. This study did not collect the participants’ RV-IgG titer data obtained at other clinics.

Conclusion
Studies have shown that pregnant women are 5 to 50 percent more likely to accept a vaccination if her obstetrician specifically recommends it to her. Presumably, the statistics are similar for women seeking medical care when not able to achieve pregnancy. Providers caring for this population of women are in a critical position to recommend, educate on, normalize the administration of, and maximize the convenience of vaccination against the devastating effects of prenatal rubella infection. Likewise, the infertility or prenatal visit also provides an excellent opportunity for recommending other immunizations, such as varicella, influenza, and hepatitis, which may significantly decrease maternal or fetal morbidity.

This study showed that there are potential opportunities to increase both the number of titer draws and the rubella vaccination or booster rates in a patient population that is primed for vaccination prior to possible conception. The greatest opportunities to improve education and vaccination rates are in patients who are American Indian or Alaskan Native and those with increased gravidity.

REFERENCES


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The Seventh District Medical Society and Alliance wish to thank Dr. Wilson and Rose Asfora for opening up their restaurant, Carnaval Brazilian Grill, to host the district’s annual fall kickoff October 1.

The meal was superb, and the fellowship between students, residents, physicians and spouses made it an enjoyable evening for all.
A Biopsychosocial Approach to Pain Management

By Kayla Riswold, MSIV; Alex Brech, MSIV; Rebecca Petersen, MSIV; Sierra Schepper, MSIV; Abby Wegehaupt, MSIV; Tamera J. Larsen-Engelkes, MSN, RN, NE-BC; Jack W. Alexander, BSN, RN, ONC; Rachel T. Barnett, BSN, RN, ONC; Sarah E. Kappel, BSN, RN-BC, ONC; Brandon Joffer; and Ping Ye, PhD

Abstract

Introduction: The goal of this project was to implement a biopsychosocial approach to pain management and measure the effects on patient perception of pain. It was hypothesized that the intervention would positively impact patients’ perception of pain.

Methods: A validated survey, the Revised American Pain Society Patient Outcome Questionnaire, was administered to patients on the day of discharge from Avera McKennan Hospital Orthopedics Unit 2-East and 2-West following total joint replacement. Prior to data collection, 2-East was renovated to create more welcoming and comfortable patient rooms. Pre-intervention data was gathered April through June of 2017. In July, a four-hour staff training session on alternative comfort measures and pain medication administration took place. Post-intervention data was gathered July through September of 2017. Data was analyzed via Microsoft Office Excel using t-test and chi-square analyses.

Results: Statistically significant improvement was seen on 2-East in pain severity and relief, least amount of pain reported, use of non-medicine methods, and impact of pain on sleep, activities, and negative emotions. Analysis of 2-East and 2-West combined revealed a decrease in overall pain, medication side effects, and impact of pain on sleep, activity, and negative emotions, although not statistically significant. In addition, there was an increase in helpfulness of information, ability to participate in decisions about pain management, and use of nonpharmacologic strategies, although not statistically significant.

Conclusion: The study found outcomes consistent with the hypothesis, although not all results were statistically significant. The complementary use of nonpharmacologic interventions shows promise for improving patient experiences post-surgery. However, more research would be necessary to recommend the widespread implementation of these techniques.

Introduction

In a medical climate with more patients complaining of chronic pain and providers increasingly uncertain about how to treat that pain, the opioid epidemic was born. Prescription opioid sales nearly quadrupled in the U.S. from 1999 to 2014.1 Unfortunately with that surge of prescriptions also came a surge of overdoses. Deaths from prescription opioid overdoses have quadrupled since 1999. In the U.S., more than 183,000 people died from opioid overdose from 1999 to 2015.2–4 Providers, public health officials, and patients alike are aware of the dangers of opioid overprescribing and overdose and have started efforts to end the epidemic.

Growing awareness of the addictive potential and side effects of pain medications has incentivized scientists to investigate alternatives to pharmacologic pain management. Guidelines released in 2016 on the management of postoperative pain strongly recommend
using nonpharmacological interventions combined with a variety of analgesic medications and techniques.\(^4\) A weaker recommendation is made to consider the use of cognitive-behavioral modalities such as guided imagery and music.\(^4\)

Research into these alternative therapies is limited; however, some studies have shown positive benefits. Music therapy, for instance, has been associated with better quality of life and decreased consumption of pain relievers.\(^5\) One mechanism proposes that music alleviates some painful stimuli by interrupting the brain’s feedback loop of pain.\(^7\) Additional research has reported a possible benefit to essential oils for preoperative anxiety and postoperative nausea control.\(^6\) Adding natural plants and fresh flowers to patient rooms has been reported to lower patients’ pain, anxiety, and blood pressure.\(^7\) Multidisciplinary rehabilitation through a biopsychosocial approach has been reported to decrease patients’ overall pain ratings and positively impact long-term pain management.\(^8\)

Work is being done to improve pain control and patient satisfaction in South Dakota. Hospital staff on the Avera McKennan Orthopedics Unit recognized that patients were often sitting in dark rooms with few diversions to distract them from their pain. In fact, between frequent pain checks and large boards noting the time until their next pain medication, patients could inadvertently be frequently reminded of their discomfort. This, in combination with the medical climate mentioned above, was the impetus for conducting a study to evaluate the effect of complementary behavioral and socially-mediated interventions.

It was hypothesized that these interventions would positively impact the patient care experience and patient satisfaction for adult patients admitted to Avera 2-East and 2-West Orthopedic Units after total joint replacement.

The goal of the intervention was to improve the Revised American Pain Society Patient Outcome Questionnaire (APS-POQ-R) scores for adult patients admitted to the 2-East and 2-West Orthopedic Units after total joint replacement.\(^9\)

**Methods**

Approval for this study was granted by the Avera Institutional Review Board. Study participants included adult patients admitted to the Avera McKennan Orthopedics Unit in hospital wings 2-East and 2-West after undergoing total joint replacement (hip, knee, or ankle). Prior to data collection, the 2-East Orthopedic Unit was renovated to create more welcoming and comfortable patient rooms. Additions included soothing images on the walls, bright lighting, and USB outlets. These outlets allowed patients to play music from their personal media devices. Patient placement on 2-East versus 2-West was dependent solely on bed availability. The two wings were separated physically but were encompassed under one unit with one leadership team and one set of specialty-trained staff. Following joint replacement surgery, patients were admitted to either wing randomly regardless of age, gender, site of joint replacement, etc.

The APS-POQ-R (2010 revised version) was used to evaluate pain severity and pain management (Appendix A – see this at sdsma.org). The APS-POQ-R was designed by the American Pain Society specifically for use in adult hospital pain management quality improvement projects. The survey measured the following six aspects of quality: 1) pain severity and relief, 2) impact of pain on sleep, activity, and negative emotions, 3) side effects of treatment, 4) helpfulness of information about pain treatment, 5) ability to participate in pain treatment decisions, and 6) use of non-pharmacological strategies.\(^9\)

The survey did not measure total pre- or post-intervention analgesic use.

The medical students on our team delivered both a letter of consent and the ASP-POQ-R survey to total joint replacement patients on 2-East and 2-West the day of hospital discharge regardless of patients’ hospital course. Voluntary verbal consent to participate was given by the participants. Participation in the survey was optional, and patients could opt out of participation at any time. No patient identifying information was included on the surveys. Surveys were collected by the medical students or the orthopedic nurse manager/unit supervisor.

In July of 2017, a four-hour orthopedic staff training session on alternative comfort methods and pain medication administration took place. The training session included both didactic and kinetic approaches to learning. Specific content included social influence theory, incorporation of art as a distraction technique, basic principles of music therapy, guided imagery, cold therapy, mobility, basic principles of motivational
interviewing, aromatherapy, and tai chi-based breathing techniques. A discussion was also held regarding the importance of incorporating spirituality into the healing process. All staff members who work with total joint replacement patients (approximately 90 people) were trained.

After the training session, staff were encouraged to use the alternative comfort methods at their discretion. Supplies for the alternative therapies were available on the unit and included aromatherapy oils, hand massage technique guide, prayers, adult coloring pages and colored pencils, disposable headphones, and lists of alternative pain management techniques. All patients did not receive the same alternative comfort measures. The alternative strategies used depended on the patients’ complaints and willingness to try new techniques as well as staff time to encourage and educate patients on the use of alternative pain management options.

To obtain a balanced sample size, data was collected during a three-month time frame both before and after the training session. Using the APS-POQ-R, baseline data was collected from April through June of 2017, while post-training data was collected from July through September of 2017. On 2-West, 38 patients were surveyed pre-intervention, and 31 patients were surveyed post-intervention. On 2-East, 20 patients were surveyed pre-intervention, and 25 patients were surveyed post-intervention.

Data was collected on paper surveys, which was then transcribed into Microsoft Office Excel by a member of the project team. On Oct. 1, 2017, data collection was complete and analysis began. Survey data was analyzed via Microsoft Office Excel using t-test and chi-square analyses as appropriate. Missing values, possibly due to patients’ uncertainty about their answers or accidentally missed questions, were not included in statistical analysis.

**Results**

Data gathered using the APS-POQ-R survey was evaluated comparing pre- and post-intervention from 2-East (remodeled) and 2-West to determine whether the interventions previously discussed improved patient reported pain control and satisfaction. A total of 58 completed surveys in the pre-intervention group and 56 completed surveys in the post-intervention group were analyzed.

There was statistically significant (p<0.05) improvement on 2-East in four areas. For category 1, pain severity and relief, the average response decreased from 4.8 to 3.7 (Figure 1). The least amount of pain reported also showed a significant decrease from 3.7 to 1.9 (Figure 2). For category 2, the impact of pain on sleep, activities, and negative emotions, there was a significant decrease from 3.7 to 2.9 (Figure 3). The use of non-medicine methods of pain management also significantly increased ($X^2 (2) = 8.22, p < .05$) (Figure 4). The most commonly reported interventions used included ice/cold pack (32), distraction (17), walking (17), deep breathing (12), relaxation (10), and spiritual support/prayer (7).

When analyzing the data for 2-East and 2-West combined, there was a decrease in overall pain, medication side effects, and the impact of pain on sleep, activity, and negative emotions, although not statistically significant. In addition, there was an increase in the mean survey responses for the questions evaluating helpfulness of information, ability to participate in decisions about pain management, and the use of nonpharmacologic strategies, although not statistically significant.

![Figure 1](image1.png)

**Figure 1.**

![Figure 2](image2.png)

**Figure 2.**
Discussion

Interpretation

Our study found outcomes consistent with our hypothesis, although not all results were statistically significant. Alternative methods of pain management proved beneficial for some patients. The results of 2-East were more consistent with the hypothesis suggesting that artistic room renovation, a non-pharmacologic strategy not covered by the survey, could have a synergistic effect with staff training leading to a significant improvement in patients’ perception of pain. Implementation of nonpharmacologic methods showed promise for improving patient experiences and pain perception after surgery. However, more research would be necessary to recommend widespread implementation of these techniques.

Limitations

The sample size of the study was relatively small for multiple reasons. Some patients in the population discharged before surveys could be administered. In addition, certain patients declined participating in the survey, while others needed help completing the survey or only partially completed the survey. The survey was only offered in English, and this excluded some patients from participating. Additionally, many techniques such as ice, walking, and prayer were already being used prior to implementation of the intervention. Few patients tried the new techniques such as massage and aromatherapy. Use of new techniques could have been limited by staff time for patient education on alternative pain management options.

Recommendations

Further research is needed before suggesting widespread implementation of the nonpharmacologic interventions used in this study. Evaluation with a larger sample size for greater power is recommended. Further research could also include analgesic use pre- and post-intervention. It would be beneficial to assess staff perspective on the intervention. Posting a list of nonpharmacologic options in patient rooms and allowing easier access to alternative methods could help increase their use. Continued training for incoming staff and ongoing evaluation of which alternative methods were most beneficial to patients may also help improve the use of nonpharmacologic pain management.

Acknowledgments: The authors would like to thank the University of South Dakota Sanford School of Medicine and the Avera McKennan Orthopedic Unit administration and staff for their support of this project. In addition, the authors owe individual recognition to Steve Lindquist, assistant vice president for Avera Behavioral Health, J. Chris Nordgren, PhD, and Matthew Stanley, MD for their help and support with this study.

REFERENCES

Help Shape the Future of Medicine in South Dakota

The South Dakota State Medical Association Foundation, the philanthropic arm of the South Dakota State Medical Association, is a tax-exempt 501(C)(3) non-profit corporation, was established to assist and support medical research, medical teaching and medical education at the Sanford School of Medicine.

On average, medical students graduate with $130,000 in debt. Contributions to the South Dakota State Medical Association Foundation provide financial assistance to students at the Sanford School of Medicine and are all designated for scholarships, grants and low-interest loans for students.

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November 2018 505
The use of pain neuroscience education (PNE) has been shown to be an effective intervention in the treatment of chronic musculoskeletal disorders for the reduction of pain, improvement in function, and lowering disability.\textsuperscript{1,3} PNE is a biopsychosocial educational strategy utilized by healthcare providers to educate patients with pain on the neurophysiology of pain to reduce fear and threat of their current pain experience.\textsuperscript{4,5} This method of education has been shown to promote better outcomes compared to traditional patient educational models that utilize biomedical and pathological information to educate patients about their diagnoses and pain.\textsuperscript{6} The traditional biomedical models of education have been shown to have limited effectiveness in reducing pain and disability.\textsuperscript{7} Effective PNE in the clinic starts with proper training of healthcare providers. Providers must be able to both recognize the need for the education strategy as well as be able to effectively deliver the content. Various studies have explored the effectiveness of PNE training with licensed healthcare practitioners.\textsuperscript{8,9} While it is important to train the current healthcare provider workforce in this newer educational strategy, the future healthcare workforce also needs to be trained during their academic preparation. PNE training with healthcare students has only been researched with physical therapy students to date.\textsuperscript{10,11}

Current evidence demonstrates that there are significantly higher rates of chronic musculoskeletal pain in patients within lower socioeconomic and among underserved populations.\textsuperscript{12} It has also been shown that individuals from...
underserved areas are most likely to receive their primary care from a physician assistant (PA) or other midlevel provider rather than a physician.\(^\text{11}\) While all health care providers should have an updated understanding of pain neuroscience, recognizing these two key statistics leads to strong support that training PA students to understand chronic pain problems and better equipping them with evidence-based approaches to care for these patients is warranted. The purpose of this exploratory study was to compare two slightly different educational lecture approaches in providing PNE information to PA students. Areas of interest in this study included assessing the effects on PA students’ knowledge of pain and their shift in attitudes and beliefs about pain following PNE training delivered by faculty trained in PNE.

**Methods**

**Design**

The study design was an independent sample analysis of PA student pain knowledge and attitudes from two different university programs before and after receiving PNE training. The two PA institutions were selected based on convenience. Instructors from the same educational company and research team were asked to deliver education regarding pain science to PA students at their respective Universities. IRB approval was obtained from University B for exempt review of existing de-identified data set.

**Participants**

Participants consisted of two PA student cohorts one from University A and the other University B. Both PA programs were 24-month master’s programs at Midwestern universities in the U.S. University A students were in the final semester of the didactic phase of the program. The lecture was included in their behavioral medicine course. The PNE lecture aided the course, which covers neurobiological, psychobiological, social, and emotional influences on health and illness in the practice of primary care medicine. University B students were in the second semester of their first year. The PNE lecture was a part of their neurology unit within their clinical medicine course and provided education on the neuro-pathophysiology of pain mechanisms. Both programs are accredited through the Accreditation Review Commission on Education for Physician Assistants.

**Instruments**

The Revised Neurophysiology of Pain (rNPQ) questionnaire was used to measure each student’s knowledge of pain.\(^\text{14}\) The rNPQ is a 12 question true/false method of assessing an individual’s knowledge of why pain is perceived and the biological mechanisms involved in a pain experience. Unmarked or undecided answers were keyed as an incorrect response in accordance with questionnaire instructions. Higher scores demonstrate higher level of knowledge of current pain neurophysiology principles. The rNPQ has demonstrated good test-retest reliability and adequate psychometric properties.\(^\text{14}\)

Study participants also took the Health Care Provider’s Pain and Impairment Relationship Scale (HCPairs) questionnaire.\(^\text{15,16}\) This scale measures health care providers’ beliefs and attitudes about the relationship of pain and disability. The HCPairs utilizes a 7-point Likert scale anchored with “1 = completely disagree” and “7 = completely agree” in response to 15 questions about the provider’s attitudes and beliefs regarding chronic low back pain. Some studies have suggested a modified HCPairs, which uses only 13 of the 15 questions from the original HCPairs. Data was calculated for both HCPairs and modified HCPairs in this study to allow for comparisons to other studies.\(^\text{15}\) Missing data for the HCPairs was coded at the midpoint of the scale if less than 10 percent of the scores were missing based on the procedure for scoring outlined in the original development of the HCPairs.\(^\text{15}\) A final score ranging from 15 to 105 with the HCPairs or 13 to 91 for the modified HCPairs was obtained by adding the individual question responses together. The higher the score, the greater the belief that pain justifies disability. The scale has demonstrated good reliability, internal consistency, and discriminate validity.\(^\text{16}\)

**Procedure**

Two separate lectures (University A lecture and University B lecture) were prepared based on information from the textbook, *Therapeutic Neuroscience Education*.\(^\text{17}\) Information was selected to meet the objectives and time allotment required for the class. University A lecture was a two-hour PNE lecture with case-based learning example. University B lectures was a separate one-hour PNE lecture without the case-based learning portion. The time set for each lecture was based on the individual course director’s syllabus and schedule determination at the beginning of the course to meet overall course objectives. Both lectures (University A and B) covered similar content regarding challenges with current biomedical approaches to treating chronic pain and updated PNE information (ion channels, nociceptive input, dorsal horn wind-up,
neuronal facilitation/inhibition, pain matrix, environmental, and stress effects on pain perception). The University A lecture added additional information, including a case-based example of the utilization of PNE and exercise to treat an individual with chronic pain. This extra hour allowed more time to be spent on the concepts of treating an individual with pain. Two separate instructors, each with faculty status at their respective university, delivered the lectures at their university. The individual presenters of the material were from the same post-professional continuing education and research group. Both lecturers have over 10+ years teaching the PNE content.

One week prior to the class where PNE was going to be presented, students were given a link to complete an on-line (PsychData, State College, PA, USA) anonymous questionnaire containing demographic information along with the rNPQ and HCPairs questionnaires. Students then attended the in-person lecture provided at their University as part of their course work. After the lecture, they were requested to complete post-lecture questionnaires for the rNPQ and HCPairs through the on-line PsychData link.

Data Analysis
IBM SPSS Statistics version 24 (SPSS, Chicago, IL, USA) was used for all data analysis. Descriptive statistics were calculated for means and frequencies for each sample population. Independent sample t-test was used to compare means of pre and post-test performance on HCPairs, modified HCPairs, and rNPQ questionnaires at each university. Because students completed the questionnaires anonymously, we were unable to match individual pre-test to post-test questionnaires. Levene’s test for assumption of variances was used. Effect size was calculated utilizing Cohen’s d (difference between the means divided by the pooled standard deviation). Interpretation of effect size was valued per Cohen’s suggestion of 0.20 representing a small change, 0.50 representing moderate change, and 0.80 representing large change.\(^\text{18}\) Level of significance was set at \(\alpha = 0.05\).

Results
Fifty-three PA students (n=30 at University A, n=23 at University B) participated in the educational sessions and completion of pre and post-test questionnaires. Four students at University B did not complete post-test questionnaires and no students were lost to follow-up at University A. See Table 1 for demographic information on both groups of students. No significant differences were found between groups with independent sample t-test for demographic variables. University A students did score significantly lower at baseline (pre-test) for HCPairs score; \(t(51)=-3.19, p = 0.002\), but there was no difference for baseline score for rNPQ scores.

Both groups showed improvement in pain knowledge as demonstrated by the improved mean score on the rNPQ. Although only the data from University A reached significance level (\(p<.05\)) (Table 2), both groups of university students showed moderate effect size changes in their improvement of pain neuroscience knowledge (Table 3). The HCPairs and modified HCPairs scores showed improvement for only the students receiving the educational session at University A (Table 2) with a large effect size noted (Table 3).

Discussion
This exploratory study showed that both a two-hour PNE lecture with a case-based example (University A lecture) or a one-hour PNE lecture only (University B lecture) provided similar gains in pain knowledge for PA students. However, in order to shift attitudes and beliefs regarding patients with chronic pain, PA students needed the 2-hour PNE lecture with the case-based example. The one-hour PNE lecture alone devoid the case-base example was unable to shift attitudes and beliefs as measured through the HCPairs scale.

This is the first study that the authors are aware of regarding PNE with PA students, so comparisons directly to other studies with PA students do not exist. Comparisons can be made with previous research on PNE training involving physical therapy students. Colleary, et al. found that a 70-minute training session with physical therapy students in the United Kingdom and Ireland had a significant improvement in pain science knowledge (mean increase of 4.0 points on rNPQ) and pain beliefs (mean decrease of 17.5 points on modified HCPairs).\(^\text{11}\) Interestingly, the starting point, (pre-test), of the students from the Colleary, et al. study was slightly different with their rNPQ (5.8) being much lower than the starting points for both University A and B. In addition, their modified HCPairs (57.9) scores demonstrated stronger beliefs between the relationship of pain and disability. These results compare with our findings from University A with improvement in both pain knowledge and
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3. To reduce the risk of suffocation and SIDS, infants should be placed on a firm sleep surface (e.g., mattress in a safety-approved crib) with a fitted sheet and no other bedding, bumper pads, or soft objects.

4. Soft objects and loose bedding should be kept away from infants’ sleep area to reduce risk of SIDS, suffocation, entrapment, and strangulation.

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attitudes and beliefs with inclusion of a case-based learning component embedded into the lecture. University B did not see the improvements in attitudes and beliefs like the Colleary et al. cohort of students did even though the education was delivered over a similar timeframe. University B did not provide a case-based learning component in their lecture. The Colleary et al. study design, like University A, had case-based learning incorporated into their educational session.

When comparing our results to another study completed with physical therapy students in the USA, additional observations were noted. Cox et al. delivered a three-hour lecture to first year physical therapy students and found significant improvements in pain knowledge as has been seen in other studies after PNE training.\textsuperscript{19-22} No improvements in attitudes and beliefs were demonstrated, however.\textsuperscript{10} The educational session provided during the Cox et al. was based on updated pain neurophysiology

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**Table 1. Demographic information**

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<th>Gender</th>
<th>University A (n=30)</th>
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<tr>
<td>Male</td>
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<td>Female</td>
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<tr>
<td></td>
<td>5.10 (5.01)</td>
<td>3.04 (3.78)</td>
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**Table 2. NPQ and HCPairs mean scores and standard deviation of pre and post-test trials for each university**

<table>
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<th>Test</th>
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<th>University B</th>
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<tr>
<td></td>
<td>Pre-test mean (SD)</td>
<td>Post-test mean (SD)</td>
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<tr>
<td>rNPQ</td>
<td>8.7 (1.6)</td>
<td>9.8 (1.2)</td>
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<tr>
<td>HCPairs</td>
<td>56.9 (8.2)</td>
<td>47.7 (9.1)</td>
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<tr>
<td>Mod HCPairs</td>
<td>47.2 (7.6)</td>
<td>36.9 (8.7)</td>
</tr>
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</table>

SD = standard deviation, rNPQ = revised Neurophysiology of Pain Questionnaire, HCPairs = Health Care Pain Attitudes and Impairment Relationship Scale, Mod HCPairs = Modified Health Care Pain Attitudes and Impairment Relationship Scale

**Table 3. Effect size (Cohen’s d) for NPQ and HCPairs for each university**

<table>
<thead>
<tr>
<th>Test</th>
<th>University A</th>
<th>University B</th>
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<tr>
<td>rNPQ</td>
<td>0.78</td>
<td>0.58</td>
</tr>
<tr>
<td>HCPairs</td>
<td>1.07</td>
<td>0.05</td>
</tr>
<tr>
<td>Mod HCPairs</td>
<td>1.26</td>
<td>0.01</td>
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</table>

rNPQ = revised Neurophysiology of Pain Questionnaire, HCPairs = Health Care Pain Attitudes and Impairment Relationship Scale, ModHCPairs = Modified Health Care Pain Attitudes and Impairment Relationship Scale
content but no case-based example was delivered. This educational format was similar to University B's content, the main difference being a one versus three-hour PNE lecture. Of interest both University B and Cox, et al. cohorts of students had higher pre-test HCPairs scores of 63.6 and 61.8, respectively compared to University A at 56.9. In their study looking at physical therapy students changes in attitudes and beliefs during their course work, Latimer et al., found improvements in HCPairs scores in three different cohorts, with the cohorts baseline HCPairs score being 54.2, 55, and 50.9.23 The higher baseline HCPairs score in this group of students could be a factor in the lack of evidence supporting changing beliefs regarding patients with chronic pain. Contradicting this theory, however, is the data showing students in the Collearya et al. cohort, who actually had even higher modified HCPairs baseline scores than University B were able to make shifts in their beliefs.

There are limitations to this exploratory study, which include small sample size with no long-term follow up on changes over time beyond the pre and post-test measure. Most notably, the university students’ selection into the two different PNE sessions were not randomized and no a priori for sample size established prior to data collection. In addition, because there was a difference in both the length of time (two-hour compared to one-hour) for delivery of the content and the methods (case-based example compared to no case-based example) direct cause and effect correlations of the PNE on attitudes and beliefs about patients with chronic pain are difficult to fully decipher. This is further clouded by the difference in attitudes and beliefs of each group prior to delivery of the PNE training. Even with these limitations, we think these results still offer important insights and suggest the need for further exploration regarding the optimal delivery of PNE to PA student and potentially other health care students. This is especially evident when the outcomes of this study are compared to other studies.

PA students can increase their knowledge of pain science understanding using an in-person lecture. Our results show that providing the content over a longer period (two-hours compared to one-hour) along with addition of a case-based example improves their attitudes and beliefs regarding patients with chronic pain more than the shorter duration presentation without an additional case-based teaching method. Future studies should continue to explore refining time and content components of PNE material to PA students and other health care providers to most effectively and efficiently prepare them with the evidence-based intervention of PNE so that they can better care for their patients who have chronic pain.

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<th>REFERENCES</th>
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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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Conflict of Interest Statement: Dr. Zimney and Dr. Louw both teach and receive honorariums from a continuing education company that provides post professional training to health care providers in pain neuroscience education. They have also written books on the topic and receive royalties from the sales of the books. No conflicts of interest are present for the other authors.
A 61-year-old male initially presented to an urgent care with apparent left hand erythema, following a cutaneous injury that occurred while working in his yard in Sierra Vista, Arizona. At this time he was afebrile and presented with normal labs. He was subsequently discharged home on a five-day course of cephalexin. Three days later, patient presented to an emergency department with worsening of the infection. Physical examination at this point showed a “beaded” appearance of the infection with tracking up the left arm and worsening erythema, pain, and tenderness. Patient was febrile and exhibited mild leukocytosis. The unique pattern of the infection suggested Sporotrichosis as a potential etiology. Further and more detailed questioning regarding the initial injury revealed that a cactus, Euphorbia polygona, was the primary source of infection. Patient was admitted to the hospital and started on 200mg oral Itraconazole. After worsening of the infection and pulmonary involvement, which included increased oxygen demand, up trending white count, and acute kidney injury, Amphotericin B was started. Cultures came back positive for S. schenckii. Patient remained on Amphotericin B for nine days. He was then switched to oral Itraconazole, which was then continued for twelve months.

The fascinating aspect of this case lies in the etiology of the patient’s infection. However, this particular case occurred in Sierra Vista, Arizona — an area known for its dry, arid climate and barren landscape. As such, Sporotrichosis was not expected, despite the fact that the patient’s signs and symptoms followed the typical clinical presentation. This caused a delay in diagnosis, which resulted in a life threatening, more advanced form of the disease.

When considering differential diagnoses, context is essential — especially with regard to uncommon etiologies as sources of common diseases. Known as “the rose gardener’s disease,” Sporotrichosis is largely dependent on the context related to the patient’s exposure to Sporothrix schenckii. This fungus typically resides on rose thorns; if the cutaneous barrier is breached and the fungus inoculates, patients will typically present with a classic “beading” of the infection tracked up an extremity.1 Provided that treatment precludes systemic involvement, the cutaneous infection is subsequently treated with a three to six month course of oral Itraconazole.1 However, for a 61-year-old male from Sturgis, South Dakota, the particular context of his infection made Sporotrichosis nearly fatal.

Like many Midwesterners this patient chose to spend the winter months in Arizona. While in Sierra Vista, he presented to an urgent care with an apparent left hand cellulitis, following an injury obtained while working in his yard. At the time of presentation, he was afebrile and had normal labs; this included a normal white count and normal renal function. Significant medical history includes hypertension, type II diabetes mellitus, and non-oxygen dependent chronic obstructive pulmonary disease (COPD). With up to date tetanus vaccinations, he

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**Abstract**

Sporotrichosis is typically seen as a cutaneous infection, resulting from inoculation of the fungus, *Sporothrix schenckii*. This fungus is typically found on the thorns of rose bushes in lush, humid environments, and the pathogen enters the body via breaches in the skin barrier.
was discharged home on a five-day course of cephalexin. Three days later he presented to an emergency department with worsening of the infection, new onset cough and shortness of breath. At this time he was febrile and his labs showed mild leukocytosis. Physical examination showed the classic, “beading” pattern of the infection, tracked up the left arm, with associated erythema, pain, and tenderness, suggesting Sporotrichosis as a potential etiology. After further and more detailed questioning, it was determined that the initial trauma to his hand had occurred while gardening a cactus, *Euphorbia polygona*, in his winter home.

 Cultures were taken and the patient was admitted into the hospital under observation status. After consulting with him and his family regarding suspected Sporotrichosis, he was started on Itraconazole, 200 mg by mouth daily. Following one dose of Itraconazole on day one of admission, the patient appeared to be worsening: his white count continued to climb, his oxygen demand increased, and he presented with acute kidney injury. A chest x-ray was ordered, which revealed presence of pulmonary lesions; therefore, Amphotericin B was started for fear of pulmonary involvement. Within two days, the cultures had come back positive for *Sporothrix schenckii*, indicative of Sporotrichosis. The patient remained inpatient on Amphotericin B for nine days. After improvement of both pulmonary and general symptoms, he was then discharged home and switched to oral Itraconazole, which was then continued for twelve months.

This case presented a significant diagnostic challenge. Sporotrichosis is not an infection typically seen in dry, barren climates like Sierra Vista. Therefore, when this patient initially presented with an infection that appeared to be cellulitis, *Sporothrix schenckii* as a potential etiology was not considered in the differential. The demographics of treatment precluded immediate recognition of Sporotrichosis’ presentation and, ultimately, resulted in more advanced, systemic involvement of the infection.

This case highlights the necessity of consideration of uncommon etiologies as potential sources of common, treatable diseases. For this patient a broadened diagnosis differential that took context into consideration ultimately proved to be life saving.
Mastering the art of differential diagnosis takes wisdom and experience. I am reminded how difficult it can be when I ask medical students to list diagnostic possibilities after they have obtained a history and exam. Students often struggle to come up with plausible possibilities. Sometimes they start by mentioning a very rare condition rather than beginning with more common and likely entities.

Experienced physicians, on the other hand, are adept at both recognizing common conditions and at generating a differential diagnosis when confronted with uncommon symptoms. But even a seasoned clinician may struggle when confronted with a patient who voices a myriad of complaints that are not suggestive of a unifying, medical explanation. Especially when a patient is vexed and insistent that a cause for symptoms be found, there may be great pressure on the clinician to keep ordering more tests and searching for an organic diagnosis. I thought of this recently when I evaluated a 35-year-old professional who had seen two previous neurologists. For years she had numbness on her entire left body as well as, periodically, numbness of both sides of the face. Such complaints don’t really fit a single anatomic distribution and her prior testing had all been unremarkable. Gingerly I ventured to discuss with her the possibility of a somatoform disorder. She denied underlying psychosocial stressors and was dismissive of the idea. Although I thought this was a likely possibility, I found myself worrying again that some organic condition might have escaped my notice. I believe all of us harbor such insecurities at times.

When a rare diagnostic entity is encountered, this too can be unsettling causing the clinician to wonder about how many other such rare diseases may have been missed in the past. Over the years, I have encountered some very uncommon conditions. These have included stiff person syndrome (I followed a patient for several years with another diagnosis and finally tumbled to the correct answer when she fell again and broke both wrists); meningoangiomatosis (identified by a neuroradiologist when I did an MRI to evaluate a persistent visual scotoma reminiscent of migraine); anti-NMDA receptor encephalitis (sent to me after the diagnosis was made, leaving me to ponder if I would have come up with the correct answer); and osteomalacia (as a cause for a diffuse extremity pain syndrome that had been missed by other clinicians and was established by abnormal lab tests and the insight of an endocrinologist).

Of course we remind ourselves that “common things are common,” and usually we don’t have to search for obscure possibilities. However, I was recently flummoxed by a combination of worrisome symptoms and test results for which I really couldn’t postulate a meaningful explanation. A 59-year-old male developed moderate dysarthria and occasional dysphagia to liquids. I judged the most likely possibilities to be either ALS or myasthenia gravis. Both were excluded by testing, as was a structural brainstem lesion when an MRI proved normal. Even testing for a paraneoplastic syndrome was negative. I opted for expectant observation and, about eight weeks later, he developed hematuria and flank pain. The CT scan of the abdomen showed hydronephrosis and an unusual thickening of the capsule surrounding both kidneys for which the radiologist really didn’t have an explanation. He also developed prominent muscle aching. I firmly believed that the hematuria and abdominal CT scan results must be in some way related to his dysarthria, but I really couldn’t postulate a plausible connection. Clearly the patient required a tissue biopsy, but I was sufficiently uneasy about his presentation that I opted to send him directly to a major tertiary center. After a prolonged evaluation there, a determination was made that he had Erdheim-Chester disease, a rare type of histiocytosis. This ultimately explained the kidney abnormalities on his abdominal CT scan and his extremity pain. Presumably his dysarthria was related as well although, when I did the literature review...
of his condition, I was unable to find another case of such prominent dysarthria as a manifestation of histiocytosis. Thus my patient not only had an exceedingly unusual unifying condition but also had an unlikely (perhaps even unique) presenting symptom with his dysarthria. Of course, even at the onset of his evaluation, it seemed highly likely that some form of organic pathology was at work. He thus differs from the 35-year-old professional noted earlier who had prominent symptoms despite normal testing.

Considering these two patients together, it is little wonder that clinicians worry about “missing something” in patients with a myriad of symptoms that defy an ordinary explanation. While seemingly bizarre and unlikely complaints often do not have a unifying organic explanation, they clearly sometimes do.

In patients like these, we must be cognizant of our own limitations. Encountering an extraordinarily rare presentation of a very uncommon disease should not dissuade us from being willing to postulate a somatoform disorder when it seems appropriate. That clearly does not mean we won’t feel apprehension at what may feel like “going out on a limb.” In the case of the 35-year-old, I did stress the option of a follow-up visit in the future and urged her to contact me if new or worsening symptoms developed. Medicine is a bit paradoxical in that we operate in a largely scientific realm but still must make many judgements that cannot be verified by radiologic and laboratory testing. Probably the biggest risk we all face is not missing an occasional rare diagnosis but closing our eyes to the possibility that something that we do not anticipate may ultimately be revealed. What we initially fail to see may eventually become evident, or not.

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Doctors often think they’re invincible, that they can’t fall prey to diseases. But, unfortunately, the reality is that they’re just as likely to get sick as other patient populations. When doctors become ill, they often first experience denial. They continue to think deeply about their symptoms yet do not seek any help, believing it’s all in their mind. They don’t want to be a burden on their colleagues and have a fear of embarrassment that there is actually nothing wrong. They recognize that they’re patients only when they have objective evidence in terms of abnormal radiologic imaging or laboratory values. Sometimes, their colleagues recognize the illness before the doctor does.

Then, as patients, they continue to think about their disease and worst possible scenarios, which addles the brain and saps their strength further. Already stressed by being the “patient,” they want to get their workups done right away, which is not possible given the health care system of our country. They can put pressure on their colleagues to order unnecessary tests or cut corners in an attempt to control the care they receive. One of the reasons for the delay in recognizing that they’ve become patients is the fear of what their colleagues will think of them or their condition, as well as being labeled with a disease. As patients, doctors are faced with the dilemma of knowing the course of treatment but not being in control, which they usually are. They become hypervigilant, trying to catch errors, and ask endless questions they know the answers to. Still, like all patients they desire reassurance.

On the other side of the table, the physicians now realize the agony patients and their families go through—the traveling, scheduling of follow-up appointments, getting time off from work, arranging childcare for children, to name just a few stressors. They now experience the anxiety of not only long waits in the waiting area but for their results and treatment. In the work of providing excellent care to patients, these important issues, which are directly relevant to patients, can be missed by doctors, only to be recognized during reversal of the role. Being a patient provides physicians with an opportunity to sharpen their communication and empathy skills. Empathy is a skill learned by practice; unfortunately, it cannot be taught.1

We believe that becoming a patient is a blessing in disguise and an opportunity for physicians to improve their patient-physician interaction and communication skills. It is an opportunity to explore those avenues that have gone unnoticed, thereby increasing the chances for pleasant experiences for their future patients. Assuming the role of the patient could be an eye-opener for many and could encourage more compassion, helpfulness, and understanding. There is a dearth of longitudinal studies in this important area of physicians’ well-being, and it needs to be examined further.

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If your patients are READY TO QUIT TOBACCO but not quite ready to enroll in the phone coaching program, talk to them about the new KICKSTART KIT. This Do-It-Yourself quit plan allows your patients to get the NRT Kickstart Kit + Quit Guide or just the Quit Guide. Both options are FREE and they don’t have to enroll in the QuitLine phone coaching program to get them. They can request their free Kickstart Kit at SDQuitLine.com/kickstart.

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In recent years, the direct oral anticoagulants (DOACs) have transformed the way we treat and prevent thrombosis. In patients with nonvalvular atrial fibrillation, DOACs have been shown to significantly reduce the risk of stroke, intracranial hemorrhage and mortality when compared to warfarin, while maintaining similar to lower rates of major bleeding. Until recently, these agents have not been recommended for use in patients with advanced chronic kidney disease (CKD), including severe renal impairment (CrCl 15 to 29 ml/min) and end stage renal disease (CrCl less than 15 ml/min), due to lack of data in this population. This is unfortunate because these patients are especially challenging to manage since they have a higher risk of stroke, as well as a significantly higher risk of bleeding with anticoagulation compared to those without kidney disease. To further complicate matters, there is evidence to suggest that anticoagulation in patients with atrial fibrillation and end stage renal disease (ESRD) may not lead to the same degree of stroke protection as in the general population. Due to this lack of efficacy data, the Kidney Disease: Improving Global Outcomes (KDIGO) guidelines state that in patients with ESRD who are on dialysis, routine anticoagulation for atrial fibrillation is no longer indicated until more data becomes available. This makes it critically important to determine the most effective and safe prophylaxis strategies in this challenging population.

Unfortunately, all of the pivotal trials leading to Food and Drug Administration (FDA) approval of DOACs for stroke prophylaxis in atrial fibrillation specifically excluded patients with a CrCl less than 25 or 30 ml/min. Because of this, as well as the ease of monitoring and reversing warfarin, the American Heart Association continues to promote warfarin as the preferred anticoagulant in this setting. Even so, it is important to note that no randomized controlled trial has evaluated the safety and efficacy of warfarin for stroke prophylaxis in ESRD. In fact, observational studies have produced conflicting results regarding the benefit of warfarin in this setting, including a possible increase in cardiovascular morbidity due to increased vascular calcification. The lack of clinical outcome data to support the use of anticoagulants in this population has led to differing opinions regarding their use in this setting.

All four DOACs approved for stroke prevention in atrial fibrillation depend on the kidneys, at least to some extent, for elimination (Table 1). This makes them susceptible to accumulation in patients with advanced CKD. ESRD is also associated with decreased plasma protein binding, which further increases free drug levels, heightens the risk of bleeding, and influences the degree of drug removal by hemodialysis.

Of the four DOACs approved for use in atrial fibrillation, dabigatran relies most heavily on renal elimination, and is the only DOAC significantly removed by hemodialysis. Recent trials have raised safety concerns with the off-label use of both dabigatran and rivaroxaban in ESRD due to a higher reported incidence of hospitalization or death from bleeding, compared to warfarin. Although dabigatran, edoxaban and rivaroxaban are all recommended for use at a reduced dosage for atrial fibrillation patients with a CrCl as low as 15 ml/min, none are recommended for use in ESRD.

In contrast, apixaban relies the least on renal clearance. In 2014, the FDA labeled dosing for the use of apixaban in advanced CKD patients with atrial fibrillation changed to the standard dose of 5 mg BID, as long as the patient does not meet the criteria for dosage adjustment. If the patient does meet at least two of the three criteria (i.e., SrCr ≥ 1.5 mg/dl, age ≥ 80 years, or weight ≤ 60 kg), the dose is decreased to 2.5 mg BID. This labeling change was based primarily on a very small, single dose pharmacokinetic study in ESRD patients on hemodialysis, which showed a
modest 36 percent increase in drug exposure after a single
dose of apixaban, when compared to patients with normal
renal function. 3

In the first study to evaluate multiple-dose administration
of apixaban in ESRD, seven hemodialysis patients receiving
apixaban 2.5mg BID for eight days achieved steady state
drug levels similar to those achieved in patients without
kidney disease receiving the standard dose of 5 mg BID. 4

After a five day washout, five of the patients went on to
receive the currently recommended apixaban dose of 5 mg
BID for eight days, and drug levels became supratherapeutic,
leaving the optimal dosing of apixaban in ESRD unclear.

More recently, Siontis and colleagues evaluated clinical
outcomes associated with the use of apixaban in atrial fibrillation patients with ESRD. 5 This study was a
retrospective cohort of 25,523 dialysis patients with non-
valvular atrial fibrillation. Each apixaban patient was
matched to three warfarin patients based on a prognostic
score, with 2,351 patients receiving apixaban and 7,053
receiving warfarin. The results showed that while there
was no difference in the incidence of stroke/thromboembolism between matched cohorts of patients receiving
apixaban (2.5 or 5 mg BID) and warfarin (HR 0.88, 95% CI
0.69 – 1.12; P = 0.29), there was significantly less
major bleeding in the apixaban arm (HR 0.72, 95% CI
0.59 – 0.97; P < 0.001).

In a pre-specified sensitivity analysis designed to examine
apixaban dosing, apixaban 5 mg BID (n=1,034) was associated
with a lower incidence of stroke/thromboembolism (HR 0.64, 95% CI 0.42 – 0.97; P = 0.04), death (HR 0.63,
95 percent CI 0.46 – 0.85; P =0.003) and major bleeding
(HR 0.71, 95 percent CI 0.53 – 0.95; P = 0.02) compared
to warfarin. The 2.5mg dose (n=1,317) showed similar
rates of stroke/thromboembolism and death as warfarin,
but a lower incidence of major bleeding (HR 0.71, 95
percent CI 0.56 – 0.91; P = 0.007). When the two doses
of apixaban were directly compared to each other, the 5mg
dose resulted in a lower risk of stroke/thromboembolism
(HR 0.61, 95 percent CI 0.37-0.98, P = 0.04) and death
(HR 0.64, 95 percent CI 0.45 – 0.92, P = 0.01), and there
was no difference in major bleeding.

<table>
<thead>
<tr>
<th>Renal clearance</th>
<th>Dabigatran</th>
<th>Edoxaban</th>
<th>Rivaroxaban</th>
<th>Apixaban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein binding</td>
<td>80%</td>
<td>50%</td>
<td>36%</td>
<td>27%</td>
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<tr>
<td>Hemodialysis removal (over 4 hrs)</td>
<td>35%</td>
<td>55%</td>
<td>95%</td>
<td>87%</td>
</tr>
<tr>
<td>FDA labeled dosing</td>
<td>50-60%</td>
<td>&lt;9%</td>
<td>&lt;1%</td>
<td>7%</td>
</tr>
<tr>
<td>FDA labeled dosing in advanced CKD</td>
<td>150mg BID (CrCl &gt; 30 ml/min)</td>
<td>60mg daily (CrCl &gt; 50 - &lt;= 95 ml/min)</td>
<td>20mg daily with evening meal (CrCl &gt; 50 ml/min)</td>
<td>5mg BID (for all patients unless meet criteria below)</td>
</tr>
<tr>
<td>Dosing recommendations not provided for CrCl &lt; 15 ml/min</td>
<td>CrCl 15 - 30 ml/min: 75 mg BID (extrapolated data)</td>
<td>CrCl 15 - 50 ml/min: 30 mg daily</td>
<td>CrCl 15 – 50 ml/min: 15mg PO daily</td>
<td>Decrease dose to 2.5 mg BID only if 2 or more of the following criteria: -SrCr ≥ 1.5 mg/dl -age ≥ 80 yrs -weight &lt; 60kg</td>
</tr>
</tbody>
</table>

* Use Cockcroft-Gault formula for determining CrCl for DOAC dosing

![Table 1. Renal characteristics and dosing* of DOACs approved for stroke prophylaxis in atrial fibrillation*](image-url)
Although this was one of the first trials to look at clinical outcomes associated with DOAC use in ESRD, there were several limitations to this study. First, it was an observational study and there may have been a tendency to use the reduced dose of apixaban in patients who were perceived to have a higher bleeding risk, which could have contributed to bias. Discontinuation rates were high, with over 60 percent of patients in each group discontinuing treatment within a year’s time. This relatively short treatment duration may reflect poor overall tolerability of anticoagulation in this population. Although apixaban users had a nearly 30 percent decrease in risk of major bleeding compared to warfarin, the bleeding rates were still significantly higher than in similar studies, especially when looking at intracranial bleeding (3.1 per 100 patient-years, compared to 0.33 per 100 patient-years in the ARISTOTLE trial). Additionally, a number of important confounding factors were not evaluated, including concurrent aspirin use, patient body weight, medication adherence rates and time in therapeutic range for warfarin.

So while warfarin remains the recommended anticoagulant for stroke prophylaxis in patients with nonvalvular atrial fibrillation and advanced CKD, the use of apixaban has been steadily increasing. This is true even though we have much to learn regarding its safety, efficacy and optimal dosing in this population. In retrospective studies, both the 2.5 and 5 mg doses were associated with less major bleeding compared to warfarin, but only the approved 5 mg dose was associated with reduced stroke/thromboembolism and death. At the same time, pharmacokinetic studies have demonstrated the potential for supratherapeutic drug levels at this dose. Although we still have areas of uncertainty, apixaban remains the DOAC of choice in this setting, as dabigatran, rivaroxaban and edoxaban are not recommended in ESRD due to a lack of data.

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For the last two years, as I have been wrestling with my own health problems, I have experienced superb care provided by emergency room (ER) docs, hospital docs, and (after I was sent home) outpatient care providers. This included my primary care internist in Brookings, my teleconferencing oncologist from Sioux Falls, and my surgeon from Rochester. I’ve experienced and benefited from the perspectives of several scopes of practice. There has been a great deal of change from the way we used to do it, and I think we have to embrace the change.

When moving to South Dakota in 1981, I was not surprised to learn that those of us in the “Brookings Clinic” shared call and the responsibility of the ER, took care of our own patients in the hospital and saw people in our outpatient clinic Monday through Friday. This was a lot of work, but it taught all of us to know and appreciate the constant changing face of medicine and gave physicians an “up-close-and-personal” relationship with our patients.

Then, over time, hospitals throughout the state started hiring docs who worked exclusively in the ER. In Brookings, that change made our home lives better, but we lost some of our ER talents in exchange. Next, maybe 15 years ago, we obtained the electronic intensive care unit (e-ICU) which gives our ICU patients the advantage of the extra eyes of a remote ICU specialist, allowing sicker people to stay in rural hospitals. However, the biggest change in the last few years involves how those patients admitted to hospitals are now being cared for by hospital care specialists (hospitalist).

Presently, when patients go home, there is a hand-off that must occur between the care of the hospitalist and the patient’s own primary care provider in the outpatient clinic. It is this hand-off which many believe could be better and is the center of an ongoing debate among doctors. I would advise patient and family to watch-dog this transition to make sure the hospitalist spoke with their outpatient care provider.

Scientific evidence-based studies have shown that the best overall care happens when it starts with an established outpatient primary care relationship. The best (and least expensive) health care would happen in this country if everyone had a designated primary care provider who would hand-off and receive from the hospital team when necessary.

Change is happening, and the benefits far outweigh the risks if only each of us could find and establish a relationship with a primary care provider.
South Dakota Board of Medical and Osteopathic Examiners 2018 Legislation Update

The South Dakota Board of Medical and Osteopathic Examiners (SDBMOE) submits a column to South Dakota Medicine to inform physicians and other licensees about various topics of interest that come to the Board. Here is an update of the new 2018 laws that are of interest or directly affect SDBMOE licensees.

Senate Bill 71 (SB 71) was sponsored by the South Dakota Medical Association and is effective on July 1, 2018. This new law makes two changes to the South Dakota Medical Practice Act:

1. Requires physicians to notify the Board, within 30 days, of any acts, including but not limited to:
   a. Any changes in contact information, unprofessional conduct, malpractice or privilege to practice issues, hospital disciplinary actions, alcohol or substance abuse issues, and law enforcement issues.
2. Medical licenses change from an annual renewal to a two (2) year renewal in the odd numbered years. This law will be in effect after July 1, 2018. The initial, reinstatement, and biennial renewal license fees for physicians were all increased to $400.00 as required.

House Bill 1019 (HB 1019) revised provisions regarding background checks for physicians and was passed by the South Dakota Legislature with an emergency provision, and was made effective upon Governor Daugaard’s February 5, 2018 signature. The bill requires an applicant for expedited licensure (through the Interstate Medical License Compact) to submit to a criminal background investigation.

House Bill 1020 (HB 1020) revised provisions and regulations regarding medical assistants after 2017 legislation ended the joint regulation of the Board of Medical and Osteopathic Examiners and the Board of Nursing. This legislation removed references to the Board of Nursing and any mention of joint regulation in the medical assistant practice act, and is effective after July 1, 2018.

House Bill 1079 (HB 1079) was sponsored by the South Dakota Physical Therapy Association to allow physical therapists with advanced training to perform dry needling. Physical therapist assistants are not included in this law and are not permitted to perform dry needling. The bill will go into effect after July 1, 2018; however, dry needling cannot take place until rules regarding dry needling have been established and passed by the SDBMOE. Every effort is being made to have the rules in place by July 1, and the SDBMOE will be informing all physical therapists of the process before the performance of dry needling can begin.
November is Diabetes Awareness Month. The Great Plains Quality Innovation Network (QIN) is engaged in activities to create awareness, promote prevention among at-risk individuals and emphasize timely education and treatment to manage this rapidly growing disease. The American Diabetes Association recommends routine assessment and referral for diet and nutritional education for all individuals diagnosed with diabetes. Managing or working to prevent diabetes is challenging and emotional. Consideration should be given for mental health care needs as well as diabetes self-management education and available community support systems.

There are three important times healthcare professionals should recommend diabetes self-management education: 1) at diagnosis, 2) during annual assessment of needs and 3) upon learning of changing or complicating factors in level of care. Newly diagnosed individuals should receive diabetes self-management education and support to become comfortable with their disease. An annual evaluation of the patient’s knowledge, skills and behavior should be conducted. Medication, weight change, activity level or nutritional factors should be addressed as needed. Blood results indicating an A1C out of the target range or unexplained hypoglycemia or hyperglycemia deserves attention. Significant complicating factors may also include cardiac or renal disease, stroke, steroid use, anxiety, depression or visual changes. Transition elements include changes in living arrangements or different providers. Other issues might involve changing insurance coverage or a decrease in cognitive function, all of which require a change in the care plan.

The burden of diabetes in South Dakota offers some unique challenges. A significant number of individuals diagnosed with diabetes are in remote areas at a great distance from their providers or comprehensive diabetic care teams. Obesity is another risk factor and challenge for individuals in all demographic areas and represents a notable risk factor for developing the disease. According to the South Dakota Diabetes State Plan 2018-2020, among South Dakota adults diagnosed with diabetes 34 percent are considered overweight and 52 percent are obese. In addition, a large racial disparity exists with American Indians reflecting 16 percent of the population diagnosed with diabetes compared to 8 percent of whites in the state.

The State Plan was developed by the South Dakota Department of Health Diabetes Prevention and Control Program and the South Dakota Diabetes Coalition to promote collaborative teamwork and advance diabetic awareness, management, education and prevention. The focus is on appropriate evidence-based resources that allow an interprofessional team and ongoing social support to help prevent and treat this disease.

Efforts to improve health outcomes and reduce issues of disparity among those diagnosed with diabetes include working with clinicians and clinics to improve outcome measures (A1C, lipids, blood pressure, weight) and promote diabetes management programs for the patients. Increasing the number of certified diabetes educators and community health workers is a goal that all stakeholders and academic centers need to support to make progress in the battle with this serious disease.

More information on diabetes self-management education as well as available community support systems is available at greatplainsqin.org/initiatives/diabetes-care/ or by contacting Stephan.Schroeder@area-a.hcqis.org or Denise.Kolba@area-a.hcqis.org.
2019 SDSMA Membership Dues Renewal Now Available

Annually, SDSMA members must renew their membership to continue receiving membership benefits. Membership renewal are done on the SDSMA website at www.sdsm.org.

To ensure a smooth renewal process for 2019, please complete the following:

1. Log into your member profile at sdsm.org. If assistance is needed, contact the SDSMA office at 605.336.1965 or membership@sdsm.org.
   a. Do not create a new account. All members have an existing sdsm.org account.

2. It is recommended that you contact your office administrator to determine if you or your organization will be paying the dues, and who will be completing this online process.

3. Once you have logged into your account, proceed to the “Pay My Dues” link at the top of the page. Payment by electronic check and credit card are both accepted. A receipt will be emailed to you upon completion of the payment.

Those with questions may email membership@sdsm.org. Thank you for your membership in the SDSMA!

New Medicare Card Update

The Centers for Medicare & Medicaid Services has started mailing new Medicare cards to people with Medicare. If a Medicare beneficiary is unable to provide a copy of their new card, Noridian offers two ways to obtain the Medicare Beneficiary Identifier (MBI):

- A Medicare Beneficiary Identifier look-up tool is available through the Noridian Medicare Portal. The new portal feature will only return the MBI if the patient’s new Medicare card has been mailed. The new cards are being mailed in phases following a geographic location strategy.

- Remittance advices generated after Oct. 1, 2018 through Dec. 31, 2019 will also provide the MBI. CMS will return both the new MBI and Health Insurance Claim Number (HICN) when providers submit a claim with a valid and active HICN. The MBI will be reported in the same place as the “changed HICN” today.

If a patient with Medicare says they did not receive a card, they may be instructed to sign into MyMedicare.gov to see if it has been mailed. If so, they may print an official card; or call 1.800.MEDICARE (800.633.4227) to verify their identity and receive help to get a new care.

Source: Medicare Learning Network

SDSMA Past President Releases Book

Rick Holm, MD, SDSMA past president and founder of the Prairie Doc, has written a book titled, Life’s Final Season: A Guide for Aging and Dying with Grace. It is available on Amazon and select bookstores in South Dakota. Dr. Holm said the book is for those who are aging, addressing “issues to help the well, the sick, those who are dying and those caring for elderly persons in the final season of their lives.” The book also tells of Dr. Holm’s personal battle with cancer of the pancreas.

Dr. Holm is a native of De Smet and retired after practicing medicine for nearly 40 years in Brookings. He is founder of Prairie Doc and hosts the weekly television show “On Call With the Prairie Doc,” airing on South Dakota Public Broadcasting on Thursdays at 7 p.m. CT.

Find dates and locations for Dr. Holm’s appearances and book signings at prairiedoc.org.
For Your Benefit:

The SDSMA Is Your Legislative Advocate

SDSMA’s legislative staff is your eyes, ears and voice in Pierre and Washington. We track hundreds of pieces of legislation that affect you, as well as coordinate opportunities for you to get involved in the process.

Do you want to be the Doctor of the Day during the South Dakota legislative session? How about a Physician Lobbyist? You can, and we can make it possible.

There are more SDSMA benefits to tell you about, and you’ll hear about them in the months to come. In the meantime, if you’d like more information about our legislative services and advocacy programs, give us a call at 605.336.1965 or visit www.sdsmo.org.

Thank you for your membership in SDSMA.

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

Medicaid Billing Reminder

South Dakota Medicaid is reminding all providers that the taxonomy code on enrollment records is the one that will be used on claims. Unless South Dakota Medicaid requires differentiating taxonomy codes for different services, only one taxonomy code for an individual practitioner should be captured.

Providers will start seeing claim denials if taxonomy codes are not populated or fail to match the enrollment record.

Source: South Dakota Medicaid

Legal Brief Highlight: Retention, Transfer and Disposition of Medical Records

Under state law, medical records must be maintained for at least 10 years. In the case of minors, records must be kept until the child is 20 years old.

The HIPAA mandated privacy rules allow patients copies of their records for as long as they are maintained. After 10 years, records may be destroyed, but an index of all destroyed records must be maintained, and 30-day notice must be given to active patients prior to records destruction. The notice must give a deadline prior to which the records may be claimed.

Prior to destruction of the active patient records, the facility must prepare and retain an index with name of the individual whose records were destroyed, medical record number, date of birth, a summary of visit dates, the attending or admitting physician and diagnosis or diagnosis code.

Records may only be transferred to certain entities named in state law – to another physician, clinic, or other health care facility, a corporation organized for the purpose of operating a health care clinic, or a patient or patient’s representative who has been properly designated in accordance with state or federal law.

State law also specifically addresses the disposition of medical records in case of facility closure. If a facility closes, medical records must be properly maintained, but may be transferred to a different facility to do so.

For more, download the SDSMA legal brief Retention, Transfer and Disposition of Medical Records at sdsmo.org. Through the SDSMA Center for Physician Resources, the SDSMA has developed more than 50 legal briefs that are available to members. In addition, the Center develops and delivers programs for members in the areas of practice management, leadership and health and wellness.
Sign Up to be Doctor of the Day at the State Capitol!

The SDSMA’s Doctor of the Day program is a huge success every legislative session.

During session, the SDSMA commits to providing a physician member to serve as Doctor of the Day for the State Legislature in Pierre. This volunteer commitment involves one day of service at the State Capitol by providing basic medical assistance to legislators and staff as needed.

As Doctor of the Day, you’ll have the unique opportunity to interact with legislators on the House and Senate floors and get a firsthand look at the legislative process and how it affects the practice of medicine. Your presence at the Capitol shows legislators not only your expertise but also your concern for the health of South Dakotans.

The SDSMA is in need of volunteers willing to spend a day to serve as Doctor of the Day. Each year we receive requests from physician assistants and advanced practice nurse practitioners who wish to participate in the program; it is critical that volunteer physicians are serving each day of session.

For more information and to see a listing of available dates, visit www.sdsma.org. Please contact Mark East at 605.336.1965 or meast@sdsma.org to sign up.

Don’t forget to send in your favorite scenic photo for South Dakota Medicine front cover consideration.

Send photos to ereiss@sdsma.org.

Contact us to reach South Dakota physicians!

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