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Cover photo by K. Remboldt, kerdallremboldt@yahoo.com
As financial advisors, we think about the traditional wealth transfer process as organizing and coordinating how our clients’ financial accounts, business interests, and physical property will pass to their heirs or the next generation. Often not included in this process is passing down a family’s core values in the form of a family mission and/or vision statement.

What if your family truly agreed on passing a set of core values down to the next generation? What if you could view your family as a business to pass down the mission, vision, goals, and succession of the family in a way that would leave a lasting legacy for generations to come?

Crafting a family mission statement is achievable, but it is rarely executed and usually encounters many obstacles. The main obstacle is finding the time to gather everyone together and have a focused conversation. Many families are separated by distance, philosophy, and other dynamics. These discussions can be difficult for families who struggle with communication, are separated by many miles, and rarely all together at one time. Another obstacle is identifying a facilitator to help navigate the process of constructing a family mission and vision statement.

If the barriers are too great to accomplish this goal, the outcome could be modified by crafting individual or personal mission statement(s) to pass down to the next generation. There are instances where families are unable to agree on their core values as a group, and passing along personal or individual mission statements is an alternative recourse.

Foster Group’s Founder, Jerry Foster, writes in “LifeFocus – Achieving a Life of Purpose and Influence” that making small vector changes to your plan in the short term, greatly impacts your long-term landing spot. We all have individual directions in life. If that course is modified ever so slightly, it can impact future generations.

You can create a lasting legacy that is so much more impactful than just the words left behind on your tombstone. Capturing your family’s core values and recording them on paper helps family members to get on the same page and have a greater probability of success in the future.

Once the ink is dry on the family mission and vision statements, they can be utilized to guide important family decisions, like determining the recipients of charitable gifts from the family foundation or Donor Advised Fund, or tackling family dynamics or conflict by leaning on the family core values as guideposts to help navigate rough waters. There is not a finish line to this process; however, it opens the door to ongoing and annual family conversations.

The process of developing these unique legacy assets of mission and value statements takes time, energy, and resources. Investing the time to accomplish this today will pay dividends for generations to follow.
Future Changes in Acute Pain Prescribing

By Christopher T. Dietrich, MD
SDSMA President

The South Dakota State Medical Association (SDSMA) has been working in conjunction with the South Dakota Department of Health (SDDOH) to address the opioid epidemic in our state. While South Dakota has the fifth lowest age-adjusted rate of opioid-related deaths at five per 100,000, prescription drug abuse is a problem to which South Dakota is not immune. In 2017, we lost 35 of our family members and friends to an opiate-related drug overdose. An additional 33 were lost to illicit drug use.

To date, the SDSMA in partnership with the SDDOH, has developed a white paper on chronic non-cancer pain, conducted numerous educational sessions – both live and via the internet, and released a clinical toolbox for providers and patients which has been made available on the SDSMA website. These measures have resulted in significant decreases in both the number of pills prescribed and in the total MME (morphine milligram equivalent) prescribed. While significant progress has been made, we have room for improvement in the area of acute pain management.

A number of studies demonstrate increased risk of new persistent opioid use in opioid-naïve patients after having been prescribed opioids for acute pain. Problems can occur in as few as five days of use. The SDSMA’s Committee on Pain Management and Prescription Drug Abuse has reviewed current literature and existing clinical guidelines in order to articulate the following recommendations for effective and responsible treatment of acute pain, including the use of opioid analgesics.

The basic strategy for treating acute pain can be summarized as:

1. Assess the degree of expected or actual pain from an injury, surgery, or procedure
2. Consider patient-related and drug-related factors
3. Use multimodal pain control methods, emphasizing, when appropriate, non-pharmacological methods and non-opioid pharmacotherapy
4. If opioids are deemed necessary prescribe only an amount to cover the expected pain or realistic duration of time to a follow-up appointment
   a. Check PMP AWARxE, South Dakota’s prescription drug monitoring program
   b. Screen for risk factors such as history of substance abuse disorder or mental illness
   c. Prescribe only short-acting opioids
   d. Discuss with patients safe storage, use, and disposal of opioids
   e. Taper or discontinue opioids as soon as possible
   f. Re-evaluate patients if healing or disease process does not follow expected course

Guidelines from the Centers for Disease Control and other organizations strongly recommend that only short-acting opioids be prescribed for acute pain because they reach peak effect more quickly than extended-release formulations and the risk of unintentional overdose is reduced. Only enough opioids should be prescribed to address the expected duration and severity of pain from an injury or procedure (or to cover pain relief until a follow-up appointment). Several guidelines about opioid prescribing for acute pain from emergency departments and other settings have recommended prescribing three or fewer days of opioids in most cases, whereas others have recommended seven or fewer days, or 14 or fewer days. CDC guidelines suggest that for most painful conditions (barring major surgery or trauma) a three-day supply should be enough, although many factors must be taken into account (for example, some patients in South Dakota might live so far away from a health care facility or pharmacy that somewhat larger supplies might be justified).

In the coming months, the SDSMA Committee on Pain Management and Prescription Drug Abuse will release a
second white paper to provide guidelines and recommendations to prescribers on the treatment and management of acute pain. Upon its’ release, we will encourage all prescribers to review the white paper. In doing so, we also encourage prescribers to incorporate the South Dakota Prescription Drug Monitoring Program (SD PDMP) into their practice. While the SDCL 34-20 requires prescribers of controlled substances to be registered with the SD PDMP, nothing mandates its use. Doctor shoppers move through our system utilizing acute, non-established visits—hopping from emergency departments to urgent care to an outpatient clinic. These patients can be identified through the SD PDMP and referred for treatment by incorporating SD PDMP data into practice.

As we make changes in our acute pain prescribing habits we expect to see even more improvements in the total number of pills prescribed. This in-turn should lead to less left-over pills in patients’ homes and in our communities. The prescribing of five or less days of medication should also decrease the number of patients who develop an addiction.

With everything, slow and steady wins the race, and success comes from discipline, perseverance and forward progress one step at a time. Therefore, in looking ahead and beyond that of prescribing practices, our future direction for improvement includes expansion of psych services, addiction evaluation and treatment programs, and long-term counseling and treatment programs.

**RESOURCES**

The Patient as Paradigm – Beware the Power Parade

By Wendell W. Hoffman, MD, FACP, FIDSA

“Each new power won by man is a power over man as well. Each advance leaves him weaker as well as stronger…”
— C.S. Lewis

This month Dr. Henry Travers and Mark East, in Physicians and Reform: The State of the Art and the Challenge to Physicians, highlight different perspectives following 2017 legislation, which permitted independent practice of advanced practice nurses and nurse midwives in South Dakota. The authors through two surveys, address access and quality and found the feedback dependent on whom you ask. They summarize that, “…physicians’ perceptions seemed at odds with their patients over care quality and access. While the primacy of physicians in patients’ overwhelming preference for them as primary care providers would seem to support the physician-controlled paradigm, the 83 percent of patients feeling somewhat or very comfortable relying on APNs or PAs for primary care suggests this model may no longer meet the needs of a patient-centered practice concept.” I applaud our APN/PA colleagues but am unsettled by an exposed disconnect where, “…physicians have not yet accepted the need for the paradigm shift implicit in real reform.” What struck me then was the foreboding idea of the control paradigm in healthcare. As powerful programs, invisible and pervasive, control our computers – so powerful ideas, also invisible and pervasive, control our patients. The Oxford English Dictionary broadly defines paradigm as “…a pattern or model.” Merriam-Webster more specifically defines it as, “a philosophical and theoretical framework… within which theories, laws, and generalizations…are formulated.” Physicians are familiar with the transformative paradigm-shifts of the Scientific Method, and its descendent Randomized Controlled Trial, which emerged during the late 19th and early 20th centuries – defining The Science of Medicine (SOM), brain trust of medical discovery. However, paradigm-shifts far less obvious have emerged during the late 20th and early 21st centuries, transforming the other half of healthcare’s mind – The Art of Medicine (AOM), brain trust of healthcare delivery. These opaque and rarely challenged premises arise from the broader “culture.” They have no concern for the “p-value” of their hypothesis, reflect the groupthink of “progress” and are stalking healthcare.

In The Abolition of Man, C.S. Lewis presciently saw that, “Each new power won by man is a power over man as well. Each advance leaves him weaker as well as stronger. In every victory, besides being the general who triumphs, he is also the prisoner who follows the triumphal car.” For Lewis the logical progression of the conquest of nature (SOM) inevitably leads to some humans controlling others (AOM) – since humanity is a part of nature. As patient advocates, three Power Paradigms should unnerve every physician – because of their subversive effect – the weakening of every patient.

The Loss of the Person: In Life After Google, George Gilder shows that the operating system of the planet is moving to the “singularity” of the Impersonal – via a theory of knowledge called Big Data, and a theory of the mind known as Artificial Intelligence. Gilder predicts however that, “…Google's system of the world will decline before the ubiquitous reality of the Person. Indeed the seeking of, “…singularities in machines rather than in human minds”, despite “…the impassible gulf between consciousness and machines”, betrays our humanity. In medicine any allowance for dehumanization is hierarchical and reductive – and so a paradigm where integers reign over immortals, is antithetical to patient-centeredness. Beware the worship of the googolplex.

The Rise of the Silo: In The Silo Effect, Gillian Tett confronts two questions, “Why do silos arise? And is there anywhere we can do to master our silos, before these silos master us?” While Tett’s focus is within organizations, she notes anthropologically that “…Silos breed tribalism…” In medicine we create silos called “brands”, which are bred not to cooperate but to compete – and so a paradigm where competition reigns over cooperation, is antithetical to population-health. Beware the wall of the system.

The Spin of the Truth: In 2016, the Oxford Dictionaries selected “post-truth” as Word of the Year. Accordingly, it means, “relating to or denoting circumstances in which objective facts are less influential in shaping public opinion than appeal to emotion and personal belief.” In medicine “Fiduciary” demands “Veritas” – and so a paradigm where preference reigns over transparency, is antithetical to public-trust. Beware the virulence of self-interest.

Dr. Travers and Mr. East are correct, “Approaching patients and the public from an historic pedestal of primacy has been and remains a fool’s errand for physicians.” Pedestals and primacies are synonyms for power and antonyms for access and quality. The Patient as Paradigm must be the new paradigm-shift, to avoid making both patient and physician prisoners – in healthcare’s Power Parade of Singularities, Silos and Spin.
Physicians and Reform: The State of The Art and The Challenge to Physicians

By Henry Travers, MD, FACP; and Mark East, BS, MS

Abstract

Within the context of medical reformation outlined by Hoffman in a series of three papers in South Dakota Medicine and the challenge of legislation involving the independent practice of advanced practice nurses, we undertook two surveys of physicians and patients. We wanted to better understand physicians’ attitudes toward certain opportunities for reform and how they conformed to the viewpoints of our patients. We found that, at least with respect to nurse practice legislation, physicians’ perceptions were at odds with their patients over questions of access and quality. Moreover, we found attitudinal differences among physicians depending upon whether they were independent or affiliated with a health care system and whether they were primary care physicians or specialists. We concluded that physicians do not yet share the common understanding necessary to advocate for a principle of medical practice encompassing the core needs of patients and the spectrum of caregivers.

In a series of three articles published in South Dakota Medicine in 2018, Dr. Wendell Hoffman1 made a powerful case for a medical reformation returning the profession to its millennia-old focus on the patient as “the only interest to be considered.” In the last of a three-part series, he figuratively nails, like Luther in the 16th century, elements (theses) for reformation upon the doors of the House of Medicine, declaring “Here we stand, we can do no other.”

Hoffman’s is a view of where we physicians should stand while recognizing that we actually stand elsewhere. He highlights a disconnect between what we profess (patient-centered care, for example) and what we practice (the patient is simply one factor in overall healthcare). Many of us would not admit to the disconnect; after all, in our own practices we treat our patients well and follow the tenants of professionalism we were taught in medical school. There is, though, nationwide evidence that the divide is real: Phan and Ginsburg recently noted, “Relying solely on providers’ instincts for ‘doing the right thing’ cannot be the long-term strategy for [payment and delivery-system] reform.”

One of Hoffman’s 14 truth-claims for reform is “…that we are all accountable for the present healthcare quagmire… [meaning] eschewing partisanship of all stripes, transcending organizational identities and cooperating instead of competing.” The current paradigm5 of medicine in South Dakota, at the core of the “quagmire”, was challenged in 2017 by a change in codified law to permit the independent practice of advanced practice nurses (APNs) and nurse midwives (NMs). Physicians’ response to the challenge, as it had been in the past, was defensive and focused on maintaining “organizational identities” rather than transcending them.

Background and Effects of the Change in South Dakota Codified Law

What was changed? Substantive issues in the enactment of legislation permitting independent practice by APNs and NMs included scope of practice, access to care and care quality. How these issues were handled through the legislative process has been previously described.6 Even though the scope of practice elements in another law

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1. The traditional concept of a physician-controlled healthcare team.
governing APNs were not changed7 (consistent with the legislative claim that scope of practice was not altered), APNs previously carried out their practices under the supervision of physicians. Moreover, their licensure was determined by a joint medical and nursing board. Now, permitted to practice without that supervision and licensed solely by a nursing board, what advanced practice nurses could do professionally, in effect, expanded. The perception of ‘expansion’ was, however, partially illusory: due to changes in regulations governing supervision,8 actual physician supervision of APNs varied considerably. Except for APNs practicing within specialized environments, direct physician review of their practices was, at best, non-uniform.

**Scope of Practice and Training.** Independent practice by nurse practitioners and nurse midwives is regulated solely by the Board of Nursing and is permitted by 25 states. Advanced practice nurses, in South Dakota, are permitted to independently (1) conduct advanced assessments; (2) order and interpret diagnostic tests; (3) establish primary and differential diagnoses; (4) prescribe, order, administer and furnish therapeutic measures (including controlled drugs); (5) perform physical examinations for sports participation; (6) complete and sign death and birth certificates and other similar documents; and (7) delegate therapeutic measures to assistive personnel. While South Dakota law is not detailed in its scope of practice description for physicians,9 each of these seven elements is part of medical practice and, thus, with respect to these seven, the scopes of practice of physicians and APNs completely overlap. Of these elements, the most important in the care of patients are the first three: the gathering and analysis of information to form a correct diagnosis is central to all further management of the patient.

A nursing degree (bachelor of science in nursing) requires four years of study after high school. Curricula include anatomy and physiology, chemistry, psychology, microbiology, pharmacology, nursing management of adults, nursing management of mothers and children, acute care nursing, and community health. APNs (a masters or doctorate degree in nursing) have, at a minimum, three additional years of training with courses in health promotion and disease prevention, therapeutics, “assessment”, pathophysiology and practical instruction. APNs may go on to further training in specialized areas.

A medical degree (doctor of medicine or osteopathy) requires four years of college and four years of medical school. Medical curricula include anatomy, pathophysiology, pathology, therapeutics, microbiology, biochemistry, behavioral science, physical diagnosis, internal medicine, surgery, obstetrics and gynecology, psychiatry and pediatrics. Physicians go on to additional training for periods of three years (for primary care) or more (for certain specialties and subspecialties). Table 1 compares the training of nurses and family physicians.

<table>
<thead>
<tr>
<th>Table 1. Post-graduate training time comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Difference between FP and NP hours of professional training</strong></td>
</tr>
<tr>
<td><strong>Doctorate</strong></td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Family physician</td>
</tr>
<tr>
<td>Doctors of Nursing Practice</td>
</tr>
<tr>
<td><strong>FP</strong>= family physician; <strong>NP</strong>= nurse practitioner. <strong>Estimate based on 750 hours of study dedicated by a student per year.</strong></td>
</tr>
</tbody>
</table>

A recent educational trend to permit nurses to obtain their masters or doctorate degrees on-line highlights a striking difference compared to physicians. Neither the primary doctorate in medicine or further training can be obtained through online programs. The consequences of this trend for practice quality have not yet been determined.

**Licensure.** While South Dakota law and regulation permit some variation, the basic requirements for licensure are these. For APNs, applicants must fulfill the requirements of registered nurses, have completed an advanced degree at an approved school, have passed a written examination and have 1,040 hours of supervised practice as a licensed advanced practice nurse, the supervision provided by a physician or a fully licensed advanced practice nurse. For physicians, applicants must be graduates of an approved school, have completed a period of post-graduate medical education9 at an approved hospital and have successfully completed an examination.

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7 South Dakota Administrative Rule 20:47:03:03 requires a one-year period of post-graduate education for those completing it prior to July 1, 1987 and at least two years of post-graduate education for those completing it after July 1, 1987.
Nursing Practice Change and Access to Care. A major purpose of the 2017 legislation was to remove barriers to APNs to provide care in underserved South Dakota communities. At the time of its passage and in the 18 months since, there has been no evidence the bill has done that. Indeed, the South Dakota Legislative Research Council, in its fiscal note to 2017-SB61A, observed “…there is nothing that would significantly increase the proportion of these providers in practice, or increase the portion of overall medical services provided…beyond the level currently represented in the state’s health care program forecast.” While data provided by the American Medical Association showed that physician and advanced practice nursing practice locations overlap, there remains no reliable data to indicate the number and location of APNs who are practicing independently. At this time, it is unlikely the legislation can or will result in increased numbers of providers in underserved South Dakota communities.

Challenge and Response. In summary, a long-standing physician-led concept of health care delivery in South Dakota was challenged through this legislation for reasons both evidence-based and speculative. Under Hoffman’s reformulation metaphor, the legislation nailed some additional theses on the door of the House of Medicine. A variety of responses to these legislative “theses” (by physicians, primarily, but also across a broad spectrum of health care providers) could be considered. In order to consider any, though, we wanted to know something more about perceptions of the effects predicted or brought about by this legislation among patients and physicians. To develop that information, the South Dakota State Medical Association (SDSMA) carried out surveys of patients and physicians.

The Patient Survey
Public Opinion Strategies, a company with offices in Washington and Denver and founded in 1991, conducted a survey of 500 South Dakotans selected because they were likely voters. Half the respondents answered questions online and half through telephone interviews. The survey was conducted between June 28 and July 1, 2018. None of the respondents were employed by the media or a political party and none were candidates for public office.

Demographics. The sample was nearly evenly split between men (47 percent) and women (53 percent) and nearly evenly divided among age groups 18-24, 35-44, 45-54, 55-64 and 65 and above. Seventy-two percent (72 percent) were from the Sioux Falls designated market area (DMA) and 26 percent from the Rapid City DMA. By specific region, 18 percent were from the Black Hills, 12 percent were West River, 29 percent were James River, 13 percent were Northeast and 28 percent were Sioux Falls. Thus, by general region, 70 percent were classified as East River and 30 percent West River. Forty-five percent were Republicans, 30 percent were Democrats and the remainder either independent, no party affiliation or unknown.

Results. Eighty-six percent of respondents had a primary care provider. Among those respondents, the provider was a physician for 76 percent, a physician assistant (PA) for 14 percent or an NP for 10 percent. Those using either NPs or PAs were more likely to live West River. The 14 percent of respondents who have no provider for primary care tend to live west river, be less well educated and have lower incomes. No matter who a respondent’s primary caregiver is, more than 90 percent were satisfied with access, their individual provider and the quality of their care. While patients were generally satisfied with primary care access, one-quarter of West River patients rated access as “not good” or “poor.” When subgrouped by age, however, older patients were much more likely (77 percent) to be very satisfied with access and quality than younger patients (61 percent very satisfied).

With respect to specialty access, patients were much less satisfied and only 35 percent of women 18-54 years old were very satisfied. This same group was also least satisfied with their quality of care (51 percent were very satisfied). While 88 percent of those living in Sioux Falls thought there were enough physicians in the area, only 54 percent of those living West River thought there were enough doctors.
Overall nearly three-quarters of respondents regard cost as the primary challenge facing health care (70 percent) with quality and access to specialty care regarded as the primary challenges by 10 percent of respondents each. However, if both a respondent’s first and second choice is considered, quality and access to specialty care become much more significant (Figure 2).

When asked who they would rather rely on for primary health care (physician, NP or PA), 74 percent of respondents selected a physician and 24 percent an NP or PA. However, 83 percent said they would feel “comfortable” relying on an NP or PA for primary care. On the question of whether NPs and PAs should have physician oversight, respondents were roughly equally divided with 55 percent believing PAs and NPs should not practice independently, but opinion differed somewhat by region (Figure 3) with older voters favoring physician-led primary care and those less educated and in less affluent economic circumstances favoring non-physician primary care by a small margin (51 to 47 percent).

With regard to specific practices of physician and non-physician health care personnel, about one-third of respondents believed that NPs and PAs should be permitted to prescribe complex drugs, perform surgical procedures, treat mental health conditions and handle life-threatening medical emergencies and trauma.

Summary. South Dakota voters are generally satisfied with their primary care providers, whether physicians, APNs or PAs. While a majority favor physician-supervised practices for non-physician practitioners, a significant minority (about one-third) favor allowing non-physician practitioners to direct patient care in psychiatric, emergency and surgical settings. With respect to health care challenges, most voters are primarily concerned with costs, although quality and access to care are also significant issues.
The Physician Survey.

The SDSMA itself conducted a survey of its membership, with 202 individuals responding to the survey. The survey included some basic demographic data and the following questions:

- Do you think past specific expansions of scope of practice [for APNs and nurse midwives] have improved patient access to primary care?
- Do you think past specific expansions of scope of practice have negatively impacted the quality of primary health care delivered to patients?
- Do you think past specific expansions of scope of practice have negatively impacted the financial viability of physician practices?
- What do you believe to be the major factors that have influenced the legislature’s recent decision-making on scope of practice issues?
- Do you or another physician health provider in your community offer after hours care in an acute care setting?
- Do you currently work or offer after hours care in an acute care setting?
- Are you willing to offer after hours care in an acute care setting by either establishing an acute care clinic or extending your hours?
- Do you provide services at a satellite clinic greater than one-hour drive from your primary practice location?
- Are you willing to either extend your satellite clinic hours and/or provide services at more satellite locations?

Demographics. While 202 individuals responded, seven identified themselves as medical students and two provided answers that suggested membership in more than one demographic group (e.g., “actively practicing” and “a medical student”). These nine were not included in the analysis below. Of the 193 remaining respondents, 11 percent were retired and 2.3 percent were physicians serving in administrative roles. Seventy-one percent were male and 29 percent were female. More than half (57 percent) were affiliated with a hospital system or group and one-third were independent. About half (46 percent) were primary care physicians and 50 percent were in specialties. Sixty-two percent practiced in urban settings of 25,000 people or more while 30 percent practiced in rural settings.

Subgroup Statistics. The participants were subdivided as indicated in the table below for subgroup analysis where appropriate. The subgroups in the two bottom rows had too few physicians for reliable statistics, but responses were nonetheless calculated.

Results. Access to care. Only 41 percent of physicians believed that past specific expansions of the scope of practice (referring to the 2017 nurse practitioner legislation) improved patient access to primary care; 56 percent were either unsure or thought access was not improved (Table 3). Strikingly, more large health system affiliated physicians were unsure of the effect of scope of practice expansion on access to care than independent physicians (9.6 percent of independents were unsure; 30.5 percent of large health system affiliated physicians were unsure).

Table 2. Subgroup statistical groups

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large system, primary care, urban</td>
<td>30</td>
</tr>
<tr>
<td>Large system, primary care, rural</td>
<td>30</td>
</tr>
<tr>
<td>Large system, non-primary care, urban</td>
<td>30</td>
</tr>
<tr>
<td>Large system, non-primary care, rural</td>
<td>30</td>
</tr>
<tr>
<td>Retired, urban</td>
<td>6</td>
</tr>
<tr>
<td>Independent, primary care, urban</td>
<td>36</td>
</tr>
<tr>
<td>Independent, primary care, rural</td>
<td>15</td>
</tr>
<tr>
<td>Independent, non-primary care, urban</td>
<td>29</td>
</tr>
<tr>
<td>Independent, non-primary care, rural</td>
<td>3</td>
</tr>
<tr>
<td>Retired, rural</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 3A. Access – large system responses

<table>
<thead>
<tr>
<th>Large System Affiliated Primary Care Urban</th>
<th>Large System Affiliated Primary Care Rural</th>
<th>Large System Affiliated Non-Primary Primary Care Urban</th>
<th>Large System Affiliated Non-Primary Primary Care Rural</th>
<th>Whole Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number in Subgroup</td>
<td>30</td>
<td>26</td>
<td>35</td>
<td>5</td>
</tr>
<tr>
<td>Did expansion improve access</td>
<td>Yes</td>
<td>43.3%</td>
<td>46.2%</td>
<td>34.3%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>30%</td>
<td>34.6%</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>Unsure</td>
<td>26.7%</td>
<td>19.2%</td>
<td>45.7%</td>
</tr>
</tbody>
</table>

Table 3B. Access – independent responses

<table>
<thead>
<tr>
<th>Independent Primary Care Urban</th>
<th>Independent Primary Care Rural</th>
<th>Independent Non-Primary Primary Care Urban</th>
<th>Independent Non-Primary Primary Care Rural</th>
<th>Whole Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number in Subgroup</td>
<td>36</td>
<td>15</td>
<td>29</td>
<td>3</td>
</tr>
<tr>
<td>Issues/Questions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did expansion improve access</td>
<td>Yes</td>
<td>44.4%</td>
<td>40%</td>
<td>41.4%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>47.3%</td>
<td>53.3%</td>
<td>44.6%</td>
</tr>
<tr>
<td></td>
<td>Unsure</td>
<td>8.3%</td>
<td>6.7%</td>
<td>13.8%</td>
</tr>
</tbody>
</table>

1These are too few in this group to calculate percentages, actual numbers are therefore given.
With respect to physician efforts to expand access (Table 4), 41 percent of active physicians reported offering after-hours care overall, but less than one-third (31 percent) of large health system affiliated urban non-primary care physicians did so. While few urban or rural primary care providers affiliated with large health systems provided services in satellite clinics (about 8 percent overall), one-third of non-primary care urban physicians affiliated with large health systems did so. Independent primary care physicians (about 30 percent overall), both urban and rural, more often had satellite clinics than their large health system affiliated primary care colleagues, and they were much more willing to add satellite clinics (37 vs. 16 percent) than their colleagues affiliated with large health systems. Altogether, two-thirds of physicians would not consider establishing or expanding satellite services.

### Quality of Care.

Fifty-five percent thought scope of practice expansions negatively impacted primary care quality, while a nearly equal number (52 percent) were either unsure or thought there was no negative impact (Table 5). Those physicians affiliated with large health systems again were more unsure of the impact on quality (30 percent of the large hospital affiliated physicians were unsure; 14 percent of the independent physicians were unsure) and fewer of them than independent physicians believed there was a negative quality impact (56 vs. 71 percent).

### Financial Impact.

Only one-third of physicians thought the financial viability of physician practices was adversely impacted by scope of practice expansions (Table 6). However, of independent rural physicians in primary care, two thirds felt that practice financial viability was adversely affected.

### Legislative Actions.

The February 2017 “nurse practitioner” bill resulted in changes in licensure for APNs and regulatory responsibility for the Boards of Nursing and Medical and Osteopathic Examiners. The legislation created the opportunity for major changes in health care practice.

Most physicians (three quarters overall) believed enactment of the bill was due to legislative perceptions that the bill would improve access to care and
because of lobbying by non-physician groups (Table 7). A smaller percentage (37 percent overall) thought the legislators were more concerned with health care economics than care quality. Very few (8 percent overall) believed the legislators acted based upon the merits of the bill itself.

**Summary.** There was no consensus opinion among physicians regarding the impact of recent scope of practice changes with respect to access or quality. Most were not convinced the changes impacted their practices financially. Most felt that the state government’s enactment of the legislation was due to perceptions of improved access and because of active lobbying by the measure’s supporters. Physicians overwhelmingly (92 percent) felt that the government’s action was not based on the measure’s merits. Only one-third of physicians provided “after hours” care and even fewer were inclined to either extend that work or provide additional practice settings away from their primary setting. There were distinct differences among physicians in different practice settings regarding “after hours” and satellite care.

**Discussion**

**General Comments on the Surveys.** While we derived conclusions based upon the surveys conducted, survey methodologies differed in a very important way. The patient survey was externally selective while the physician survey was self-selective. Participant motivations for completing the surveys differed. Each survey sampled less than 10 percent of its population. Therefore conclusions drawn from the response rates of these surveys are subject to some margin of error.

**The Question of Quality.** At the time APNs and physicians first encounter patients as independent practitioners, their scope of training has been considerably different. Perhaps in recognition of this, South Dakotans retain a preference for physicians as their primary care providers. Arguably, the physician is better prepared to carry out the basic elements of diagnosis central to all subsequent patient care. Belief in the rectitude of this view may underlie physician opinions regarding the relationship between training and care quality. Overall, physicians were equally divided in the assessment of the impact of independently

### Table 6A. Financial impact – large system responses

<table>
<thead>
<tr>
<th></th>
<th>Large System Affiliated Primary Care Urban</th>
<th>Large System Affiliated Primary Care Rural</th>
<th>Large System Affiliated Non-Primary Care Urban</th>
<th>Large System Affiliated Non-Primary Care Rural</th>
<th>Whole Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number in Subgroup</td>
<td>30</td>
<td>26</td>
<td>35</td>
<td>5</td>
<td>193</td>
</tr>
<tr>
<td>Did Expansion Negative Impact Financials</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>49%</td>
<td>30.8%</td>
<td>31.4%</td>
<td>0%</td>
<td>33.8%</td>
</tr>
<tr>
<td>No</td>
<td>26.7%</td>
<td>36.8%</td>
<td>25.7%</td>
<td>3/5</td>
<td>31.3%</td>
</tr>
<tr>
<td>Unsure</td>
<td>33.3%</td>
<td>38.4%</td>
<td>42.9%</td>
<td>2/5</td>
<td>32.3%</td>
</tr>
</tbody>
</table>

### Table 6B. Financial impact – independent responses

<table>
<thead>
<tr>
<th></th>
<th>Independent Primary Care Urban</th>
<th>Independent Primary Care Rural</th>
<th>Independent Non-Primary Care Urban</th>
<th>Independent Non-Primary Care Rural</th>
<th>Whole Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number in Subgroup</td>
<td>36</td>
<td>15</td>
<td>29</td>
<td>3</td>
<td>193</td>
</tr>
<tr>
<td>Did Expansion Negative Impact Financials</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>38.9%</td>
<td>66.7%</td>
<td>37.9%</td>
<td>3/3</td>
<td>33.8%</td>
</tr>
<tr>
<td>No</td>
<td>33.3%</td>
<td>13.3%</td>
<td>51%</td>
<td>0/3</td>
<td>31.3%</td>
</tr>
<tr>
<td>Unsure</td>
<td>27.8%</td>
<td>20%</td>
<td>31.1%</td>
<td>2/3</td>
<td>32.3%</td>
</tr>
</tbody>
</table>

*There are too few in this group to calculate percentages; actual numbers are therefore given.

### Table 7A. Physician perceptions of influences on legislators – large system responses

<table>
<thead>
<tr>
<th></th>
<th>Large System Affiliated Primary Care Urban</th>
<th>Large System Affiliated Primary Care Rural</th>
<th>Large System Affiliated Non-Primary Care Urban</th>
<th>Large System Affiliated Non-Primary Care Rural</th>
<th>Whole Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number in Subgroup</td>
<td>30</td>
<td>26</td>
<td>35</td>
<td>5</td>
<td>193</td>
</tr>
<tr>
<td>Major Factors Influencing Legislative Decision</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expansion of scope improves access</td>
<td>83.3%</td>
<td>92.3%</td>
<td>71.4%</td>
<td>4/5</td>
<td>76.4%</td>
</tr>
<tr>
<td>Lobbying by non-physician groups</td>
<td>89%</td>
<td>80.1%</td>
<td>71.4%</td>
<td>2/5</td>
<td>81.4%</td>
</tr>
<tr>
<td>Political support of the Governor</td>
<td>13.3%</td>
<td>19.2%</td>
<td>23%</td>
<td>1/5</td>
<td>19.6%</td>
</tr>
<tr>
<td>Public support or opposition</td>
<td>10%</td>
<td>7.7%</td>
<td>22.9%</td>
<td>0/5</td>
<td>14.1%</td>
</tr>
<tr>
<td>Campaign funds and support</td>
<td>19%</td>
<td>15.4%</td>
<td>22.9%</td>
<td>1/5</td>
<td>18.8%</td>
</tr>
<tr>
<td>Merits of the issue</td>
<td>13.3%</td>
<td>0%</td>
<td>5.7%</td>
<td>0/5</td>
<td>8.6%</td>
</tr>
<tr>
<td>Unknown</td>
<td>0%</td>
<td>3.9%</td>
<td>0%</td>
<td>0/5</td>
<td></td>
</tr>
<tr>
<td>Public failure to understand the issue</td>
<td>0%</td>
<td>3.5%</td>
<td>0%</td>
<td>0/5</td>
<td></td>
</tr>
<tr>
<td>Economics: how to spend health care dollars</td>
<td>26.7%</td>
<td>34.6%</td>
<td>34.3%</td>
<td>1/5</td>
<td>36.7%</td>
</tr>
<tr>
<td>Lack of understanding of training</td>
<td>0%</td>
<td>0%</td>
<td>2.5%</td>
<td>0/5</td>
<td></td>
</tr>
<tr>
<td>No basis for understanding qualifications</td>
<td>0%</td>
<td>0%</td>
<td>2.5%</td>
<td>0/5</td>
<td></td>
</tr>
</tbody>
</table>

*75% of participants gave 15 individual other answers
practicing APNs on the quality of care, but independent physicians were more convinced of a negative impact than other groups. Patients, on the other hand, were less divided: 91 percent thought their primary care quality was satisfactory or very satisfactory, regardless of practitioner delivering it. Why the differences in perceptions of quality between physicians and patients?

The Institute of Medicine introduced a widely used definition of quality\(^4\) in 1990,\(^5\) but its measurement has remained elusive.\(^6\) The three domains of quality (structure, process and outcome) are viewed differently by each element of the healthcare enterprise. Patients may develop their conclusions based on process: timely evaluation by friendly practitioners resulting in something being done to address their complaints. While outcome is probably important to patients as well, anyone who has practiced for more than a few years recognizes that favorable outcomes obtain – particularly in the outpatient setting – most of the time. Thus, it appears reasonable that the quality results reported in the patient survey most likely indicate satisfaction with the process of care. Physicians, on the other hand, may focus more on structure and their views of outcome may be more granular than those of patients. In viewing structure, physicians may concentrate on attributes of a healthcare system that are different from the fundamental desires of their patients. One of these, training hours, was an element in physician arguments regarding quality during the legislation’s consideration of the nurse practitioner bill (see Table 1).

There appears to be a disconnect between physicians’ perceptions of quality and that of their patients. Seventy to eighty percent of physicians either favored the notion of diminished care quality with independently practicing nurse practitioners or were unsure of the impact regardless of subgroup. In contrast, 90 percent of patients were satisfied with the quality of their providers with 24 percent of those surveyed being cared for by a nurse practitioner or physician assistant. Independent of who provided their primary care, 84 percent of patients were very comfortable or somewhat comfortable with relying on a nurse practitioner or physician assistant instead of a physician for their care, and 16 percent were either not very comfortable or not comfortable at all.

Perception of quality may bear no relationship to objective “measurement” of quality. Important to the passage of the nurse practitioner legislation was the claim in legislative hearings that nurse practitioners working independently provide the same quality of care as physicians. While that claim was not then persuasively challenged, a 2014 study by Veterans Administration (VA) researchers found evidence supporting the claim insufficient or low – with rare medium quality evidence – concluding that there was “…scarce long-term evidence to justify [it].”\(^7\) Of interest here is a recent Medscape interview with Susan Yox and Julie Stanik-Hutt\(^8\) where Dr. Stanik-Hutt characterized much of the evidence in her 2013 study of care provided by nurse practitioners\(^9\) as “high level.” The VA study, which included Stanik-Hutt’s work, pointed out that it was not given that rating because it did not “…define the autonomy of nurses, compare non-autonomous nurses with physicians, or evaluate nurse-direct protocol-driven care for patients with specific conditions.”\(^10\) More recently, Laurant and colleagues\(^11\) from the Radboud University Medical Center in the Netherlands, published a review of 18 physician-advanced practice nursing studies through

| Table 7A. Physician perceptions of influences on legislators – large system responses |
|----------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                                      | Independent | Independent | Independent | Independent | Whole             |
|                                      | Primary    | Primary    | Non-Primary  | Non-Primary  | Group             |
|                                      | Care Urban| Care Rural| Care Urban| Care Rural|                  |
| Number in Subgroup                   | 36         | 15         | 29          | 3           | 193               |
| Major Factors Influencing Legislative Decision | | | | | |
| Expansion of scope improves access | 72.2%      | 66.7%      | 68%         | 2/3         | 76.4%             |
| Lobbying by non-physician groups     | 85.9%      | 73.3%      | 85.2%       | 3/3         | 81.4%             |
| Political support of the Governor    | 16.7%      | 20%        | 17.2%       | 0/3         | 18.6%             |
| Public support or opposition         | 8.3%       | 13.3%      | 3.5%        | 1/3         | 14.1%             |
| Campaign funds and support           | 22.2%      | 6.7%       | 24.1%       | 0/3         | 18.6%             |
| Merits of the issue                  | 0%         | 13.3%      | 0%          | 0/3         | 8.6%              |
| Unknown                              | 0%         | 3.5%       | 0%          | 0/3         | *                 |
| Public failure to understand the issue | 0%         | 3.5%       | 0%          | 0/3         | *                 |
| Economic: how to slice health care dollar | 44.4%      | 40%        | 34.3%       | 2/3         | 38.7%             |
| Lack of understanding of training    | 2.8%       | 0%         | 3.5%        | 0/3         | *                 |
| No basis for understanding qualifications | 0%         | 0%         | 0%          | 0/3         | *                 |
| Belief there was a physician shortage | 0%         | 6.7%       | 0%          | 0/3         | *                 |

\(^4\) Quality is the degree to which health care services for individuals and populations increase the likelihood of desired outcomes and are consistent with current professional knowledge.
None of the studies provided “high-certainty” evidence and, like that in the VA study, most evidence was either low-certainty or very low. Notwithstanding the evidence quality, Laurant concluded that “…for some ongoing and urgent physical complaints and for chronic conditions…nurse practitioners…probably provide equal or possibly even better quality of care compared to primary care doctors, and probably achieve equal or better health outcomes for patients.” On the other hand, they also concluded that the effects of “nurse-led care on process of care” and “nurse-led care on the costs of care” were uncertain due to very low quality of evidence.

Nursing blogs further the notion of quality equivalence, and studies supporting the assertion that APNs provide care quality at least at the same level as physicians have been published subsequent to the 2014 VA review. Jackson et al. from the Durham VA Medical Center in North Carolina, studied diabetes outcomes (hemoglobin A1c control, blood pressure control and low-density lipoprotein cholesterol control), concluding “No clinically significant variation was found among the three primary care provider types with regard to diabetes outcomes.” Another study was a meta-analysis of studies based on physiologic outcome measures (e.g., patient blood pressures or glucose control), subjective health status (using various assessment questionnaires), patient satisfaction, cost of care (i.e., practitioner salary, laboratory use, medication costs), resource utilization (i.e., patient visit length, number of referrals) and process measures (i.e., adherence to clinical guidelines). Based on the evaluative criteria used by the VA, though, these investigations continue to provide less than high-quality evidence.

Besides considerations of evidence quality when comparing care quality of APNs and physicians, one must be careful about conclusive statements that are more generalized than the evidence permits. For example, Anne Peters, an endocrinologist from the Keck School of Medicine of the University of Southern California, in an editorial about Jackson’s diabetes care comparison, said that “…NPs and PAs working within the U.S. Veterans Affairs (VA) health system had outcomes equivalent to those of patients cared for by physicians in a primary care setting.” Such overgeneralizations of limited studies distort what we can really conclude from evidence presented.

Comparisons of cognitive performance between physicians and APNs have shown varying results. A study from New Zealand compared the diagnostic reasoning of nurse practitioners to physicians and found no statistical differences between those groups when presented with a single complex case scenario. On the other hand, Hughes et al. showed that APNs ordered more imaging procedures than their physician counterparts for established patients, although there was no difference between them for new patients. Lohr et al. studied referrals to an academic medical center and concluded that referral quality (clarity of the referral question, pathophysiology understanding and pre-referral evaluation and documentation) were higher for physicians than for APNs. Schmidt et al. reported that adult patients seen by an APN were 15 percent more likely to inappropriately receive an antibiotic than those seen by a physician. Sanchez et al. provided similar data showing overprescribing of antibiotics more by APNs than physicians.

Altogether, evidence of comparative practice quality between physicians and APNs (and, therefore, patient safety) is objectively inconclusive. Arguments on either side of the question can be disingenuous for the sake of an agenda more about “turf” than patients. An agreed-upon concept among those engaged in health care delivery in South Dakota is needed to improve quality, that concept encompassing all three of quality’s major components. Such an agreement is a basic underpinning of efforts of all types, including legislation, to improve quality.

Unfortunately, physician perceptions in the present survey do not appear to be informed by systematic evidence. Evidence and perceptions of quality as shown here along with public testimony related to nursing practice legislation suggest physicians have been ineffective in disseminating credible and convincing views of healthcare quality among themselves and their patients.

The Question of Access. Access to healthcare is more than just the availability of facilities and practitioners. Younger Americans (millennials) are approaching healthcare quite differently from the parents and grandparents. Only two-thirds of millennials have a primary care provider and one-third favor walk-in clinics over physician offices and hospitals. Seeking to understand access challenges and provide solutions today requires data stratified by age.

One-quarter (25 percent) of West River patients thought
Fact:

- A single JUUL pod contains as much nicotine as a pack of 20 regular cigarettes.

- Nicotine can harm a growing brain – it is known to damage brain circuits that control attention, learning, and susceptibility to addiction.

- Young people who use e-cigarettes may be more likely to go on to use regular cigarettes.

JUULing is dangerous.

The newest e-cigarettes are shaped like flash drives and are being used at alarming rates by teens. They are very discrete and come in an array of tasty flavors. Remind young patients and parents that tobacco use in ALL forms comes with serious health risks and encourage them to talk about JUULing.

Mom, everybody is JUULing. It's no big deal... way safer than smoking, and it's fun.

Well... some people use vape short term to help them quit smoking, but the truth is, vape is full of cancer causing chemicals, heavy metals, tin, lead, and high levels of nicotine. Not only is nicotine very addictive, but it can stunt your brain growth.

Some don't contain nicotine. It's just harmless flavor and water vapor...

A few maybe. But most kids want the nicotine buzz and all JUUL pods contain lots of nicotine. And it's not fully regulated yet, so you may not know what you're getting. If you keep using it, it will damage your brain. You'll never know how smart you could've been.

Whoa – I didn't know that. I think I might stay away from that stuff. So not worth it.

WARNING: E-cigarette use among young people has risen significantly over the last 5 years. Use among middle and high school students has now surpassed use of regular cigarettes.
that access to care was inadequate, though overall in the state 31 percent of millennials drew the same conclusion. As can be seen in Figure 4, data from the South Dakota Department of Health support this perception, although their data is not granular enough to draw any meaningful conclusions about whether the nurse practitioner legislation can meaningfully address the shortage.

Over half (56 percent) of physicians either thought the nurse practitioner legislation would not improve access or they were unsure about it. This view is understandable since there is little published evidence about the distribution of APNs. Surveys by the American Medical Association suggest they are distributed similarly to physicians.\(^1\)

Using information from state nursing boards and the University of Wisconsin’s County Health Rankings database, Jakobs and Bigbee\(^2\) looked at advanced practice nurse distributions and health outcomes in frontier counties\(^3\) in 14 states including South Dakota. In South Dakota, of 38 frontier counties they identified, 30 were served by 72 APNs.\(^4\) This represents 9 percent of the total number of APNs in the state.\(^5\) Using the same data sources and definition of a frontier county as Jakobs and Bigbee, we found the percentage of primary care

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\(^1\) Defined by the Rural Health Information Hub (https://www.ruralhealthinfo.org) based on a matrix that includes population density and distance in miles and travel time from a market-service area. The definition was adopted by the National Rural Health Association and The Western Governors Association. However, for this study, a frontier county was defined only by a population density of <7 persons per square mile.

\(^2\) Defined as nurse practitioners, certified registered nurse anesthetists, certified nurse-midwives and clinical nurse specialists.

\(^3\) While data from the Board of Nursing given to the Legislative Research Council at the time nurse practitioner was being considered indicated 800 nurse practitioners in the state, the 2017 Healthcare Workforce Report from the South Dakota Department of Health indicated that of the 963 total individuals, 301 had addresses not located in South Dakota. In addition to the nurse practitioners, there are 440 certified nurse anesthetists of whom 99 had addresses outside of South Dakota.
physicians in these counties is also about 9 percent of the total number of primary care physicians in the state. The AMA Health Workforce Mapper application\textsuperscript{12} gives physician and advanced practice nurse distribution, but only in the larger metropolitan data areas (i.e., Sioux Falls and Rapid City). Nonetheless, at least in these two regions, physician and advanced practice nurse distribution track together.\textsuperscript{1}

West River patients’ views of access, together with those of physicians, appear to coincide with the limited demographic information available regarding caregiver distribution and access. The 2017 nursing practice legislation, from its beginning, was objectively unlikely to achieve the aim of alleviating practitioner shortages in rural South Dakota counties. Indeed, research by Schneider et al.\textsuperscript{13} agreed with several previous studies examining access to surgical services showing that legislation emancipating nurse practitioners from physician supervision had no effect on access. That this was predicted by the Legislative Research Council prior to the legislation’s passage should not go unnoticed by anyone wishing to understand why the persuasive power of objective evidence was so ineffective.

**The Question of Financial Impact.** One-third of all physicians believed the nursing practice legislation would have a negative impact on physician finances. Twice that percentage of rural independent physicians, though, considered the legislation would encroach on physician incomes. These physicians had a distinctly different view from their large system-affiliated and their rural independent non-primary physician colleagues, two thirds of whom were either unsure or thought there would be no negative effect.

No convincing evidence that physician incomes are adversely impacted by nursing practice legislation exists. Pittman and Williams\textsuperscript{14} reviewed studies prior to 2012 and presented their own research showing essentially no effect of the nursing practice legislation. In their review of the evidence, though, it is clear that much of the data upon which conclusions are based comes from estimates, assumptions and inferences, caveats that provide little confidence in the integrity of any conclusions. Moreover, confounding variables (e.g., patient provider choice; corporate staffing practices; insurance reimbursement practices) impact compensation as well.

In the exceedingly complex economic environment of health care, where myriad players control inputs and outputs through relationships not always obvious, there is, at this time, no realistic chance of establishing the impact, if any, of independently practicing APNs on physician compensation.

**Physicians and Reformers.** The 2017 success of legislation permitting advanced practice nursing independent of physician oversight was based on two persuasive premises: (1) the access premise that APNs would alleviate provider shortages in many areas of South Dakota and (2) the quality premise that the quality of care rendered by APNs was at least equal to that rendered by primary care physicians. Our patient survey offered subjective support to quality premise, at least as far as patient perception of satisfaction can indicate actual care quality. While patients were generally satisfied with accessibility of their primary care provider, regardless of whether the provider was a physician, an APN or a PA, there was notable regional dissatisfaction in western South Dakota including both primary and specialty care access. In spite of these levels of satisfaction independent of the practitioner, three-quarters of South Dakotans surveyed would rather rely on a physician for their primary care than any other practitioner.

Beyond confirming perceptions of provider shortages in certain areas of the state, our patient survey was not informative about the access premise. Nonetheless, it is clear from other evidence (vide infra) that APN and physician distribution are the same and that practitioners generally, and APNs in particular, are not alleviating nor are they likely to alleviate the rural shortage of practitioners in the state. Moreover, patients saw more challenges in health care costs and access to specialty care than in either general care access or quality.

In their responses to questions about the 2017 nursing practice legislation, physicians’ perceptions seemed at odds with their patients over care quality and access. While the primacy of physicians in patients’ overwhelming preference for them as primary care providers would seem to support the physician-controlled paradigm, the 83

\textsuperscript{1} Since the submission of this manuscript, Xue, Smith and Spetz published a research letter suggesting a decline in physician numbers in low-income Health Service Areas (HSAs) with a corresponding increase in nurse practitioner numbers in those same areas (JAMA 2019; 321(2):102-4). That conclusion is not supported by their data: physician numbers in all HSA income quartiles remained steady during their study period while NP numbers increased in all quartiles, largely because NP numbers have doubled over the six years covered by the study while primary care physician numbers increased 6 percent. Moreover, the data for rural area practitioners shows considerably higher standard deviations for MD and NP numbers such that the suggested trend of MDs away from rural areas may be an illusion.
percent of patients feeling somewhat or very comfortable relying on APNs or PAs for primary care suggests this model may no longer meet the needs of a patient-centered practice concept. Approaching patients and the public from an historic pedestal of primacy has been and remains a fool’s errand for physicians. If physicians are to accept Hoffman’s reformation, to carry beyond mere rhetoric the “patient first” imperative, then they must advocate a common principle of medical practice with evidentiary support that encompasses the core needs of patients, the current and likely future spectrum of caregivers, and innovation in the actions they take. With respect to the nursing practice legislation in particular, this means comprehensive understanding of access issues in South Dakota and a common understanding of quality. It also means recognition that legislation driven by competition is not helpful, and that patients, legislatures, payers, regulators and others must be presented with a united, common and convincing path forward.

As our physician survey has shown, however, there are differences among physicians affiliated with health care systems and independent physicians as well as between primary care physicians and specialists within a health care system. The differences are evident in the willingness of physicians to extend their practices into underserved areas. Thus, in order for physicians, acting as a united profession, to effectively advocate for patients and their access to quality care, they must engage the health care systems of the state to accept a shared guiding principle of medical practice. Beginning with a patient-first principle, physicians must initiate and measure efforts to promote quality, provide access and establish funding models consistent with it.

Here We Stand. That physicians have not yet accepted the need for the paradigm shift implicit in real reform may be seen in the 2019 advocacy agenda of the SDSMA. For issues such as telemedicine, Medicaid, health insurance, addiction treatment, and medical liability, the agenda focuses on funding. Other issues, including medical liability reform, administrative and regulatory reform, scope of practice, end-of-life care and physician-patient relationships do not rally around a unifying principle, but confute, rather than merge, physician interests with those of the patient.

If we do not accept the need for a paradigm shift and take the steps to implement it, the scene becomes reminiscent of Luther’s April 1521 appearance before Emperor Charles V in the Rhineland city of Worms. Arrayed against Luther (and today’s Hoffman) were the Catholic Church (organized medicine), the emperor (government) and the papacy (the healthcare system). As then, with discussion devolving into siloed squabbles, the patient a distant, shadowed and forgotten figure, today’s quiet, yet determined “Here I stand” – as it did for the beliefs of everyday people five centuries ago – might eventually reform a profession.

### REFERENCES

8. South Dakota Administrative Rules, Section 20.62.03.
17. McCleery, Evidence brief, 6.

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Mark East, BS, MS, Executive Vice President, South Dakota State Medical Association.

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1 Charles V was the last Holy Roman Emperor to be crowned by the Pope. This took place in 1530, so at the time of the Luther inquisition Charles did not rule as “divinely” as he did afterward.
safe sleep ABCs

**A** lone  **B** ack  **C** rib

BABIES SHOULD SLEEP **ALONE**, ON THEIR **BACKS**, AND IN A **SAFE CRIB**.

As providers, we know safe sleep practices save lives. Remind your patients that *room sharing is recommended but bed sharing is not*. Babies should never share any sleep surface with an adult, a child, or a pet.

To find out more about the American Academy of Pediatrics’ Recommendations for a Safe Infant Sleeping Environment, go to [ForBabySakeSD.com/training](http://ForBabySakeSD.com/training).

Encourage your patients to follow these simple ABCs at every sleep time.

---

*for baby's sake*

Healthier moms + Healthier babies
Introduction

Immunization against vaccine preventable diseases has been one of the ringing successes of modern medicine. Yet, despite the effectiveness and availability of vaccines, many individuals are not up-to-date on their vaccinations. This is especially true of adults, in contrast with pediatric populations which are much more likely to have received indicated immunizations.¹

Recognizing the need to increase immunization rates within our clinic population, especially among the vulnerable elderly, a quality improvement project was implemented. The goal was to achieve a 70 percent immunization against influenza and a 90 percent immunization rate against pneumococcal disease among our patients age 65 years and older during the 2016-17 influenza season. These goals were based on the Healthy People 2020 targets of 90 percent.² Baseline rates for pneumococcal immunization in our population were approximately 60 percent, so the target represented a 30 percent increase. Influenza baseline immunization rates were substantially lower, at 35 percent, so the target was adjusted to a similar increase in rate as we planned for pneumococcal vaccination. A 70 percent immunization rate for influenza presented a 35 percent increase as our goal.

Materials and Methods

Population

Physicians from the Sioux Falls Family Medicine Residency care for patients at two outpatient family medicine clinics: Center for Family Medicine (CFM) and Falls Community Health (FCH). They are two very different clinics with different administrations, clinic dynamics and funding sources. CFM is an academic resident and faculty clinic with a patient population that encompasses many diverse ethnic backgrounds, cultures, and languages. FCH is a Federally Qualified Health Center (FQHC) in Sioux Falls, run by the city and
supported by federal grants, that cares for mainly uninsured or underinsured patients with a lower socioeconomic status. Both practices serve a large number of immigrants and Native American patients.

The target subpopulation for the quality intervention was patients age 65 and older who receive their care at either of the outpatient clinics (CFM and FCH).

Interventions

Patient education – An effort was made to bombard our patients with information regarding the benefits of immunization in the older population. This was accomplished at several levels.

Most general, a public service announcement (PSA) promoting the influenza vaccine was developed and aired on the city channel throughout the influenza season (www.youtube.com/watch?v=PewCoYCMmuQ). Although the goal was increased awareness among our patients, this likely reached patients of all practices throughout the community.

In addition to the general PSAs, the patients of CFM and FCH were specifically targeted with direct mailings. Letters encouraging vaccination were sent to all FCH patients in the target age group; they were sent only to those from CFM who had neither an influenza nor a pneumococcal vaccination on record, due to the much larger population in that age range.

Most personally, once within the clinic environment, patients encountered posters listing reasons to get vaccinated that were displayed in the waiting area, bathrooms, and in every exam room at CFM (Figure 1). Policy at the FCH precluded the use of the posters in exam rooms, so an electronic version was displayed electronically in the waiting area of that clinic. Personalized handouts with the same text as the posters and a photo of the patient’s primary physician were produced in English and the next four most common languages of patients seen in the
clinic: Spanish, Tigrinya, Nepali, and Kunama (Figure 2). These were given to all targeted patients at any encounter they had with the clinic.

**Physician education** – A lecture was incorporated into the residency’s regular daily noon conferences. It debunked common vaccine myths and gave residents and faculty knowledge, including statistics, in order to develop strategies for conversations with their patients about why they should have the vaccines. The sometimes-complicated vaccine schedules and indications for pneumonia vaccines were also reviewed. Audience group participation in solving challenging case examples was used in an effort to improve retention.

**Infrastructure development** – The nursing workflow for patients presenting at both clinics includes a review of immunization status for all routine vaccines for pediatric patients; this workflow was modified to include a review for influenza and pneumococcal immunization status of patients 65 years of age or older. In addition, consistent locations within each electronic medical record (EMR) were established in which to document vaccinations, including those given to clinic patients at outside facilities.

The vaccination policies of local hospitals and of the nursing homes in which CFM or FCH patients resided were reviewed to ensure standing orders were in place for both influenza and pneumococcal immunization.

The cost of vaccinations given during this project was covered by a Senior Immunization Grant Award from the American Academy of Family Physicians Foundation and provided free of charge to the recipients.

**Data collection** – To collect baseline data, a query was done within the eClinicalWorks (Westborough, MA) EMR at CFM and the SuccessEHR (Greenway Health, Carrollton, GA) EMR at FCH to obtain historical influenza and pneumococcal (the latter separated by vaccine type) immunization rates for two years preceding the intervention, and current rates for the season in which the interventions were implemented.

**Statistical analysis** – Statistical analysis was performed using Test of Equal or Given Proportions in the R statistical package. Using Bonferroni’s procedure, significance was set at $p < 0.0167$ to account for experiment-wise error rate.

**Human subject protection** – Quality improvement is defined as the systematic, data-guided activities designed to bring about immediate improvements in health delivery in particular settings. This project did not meet the definition of research, and though conducted in an ethical manner, was not subject to institutional review board approval.

**Results**

Initial immunization rates among the target population for the two years prior to the intervention were substantially lower than either the national or state rates. For the season in which the interventions were implemented, influenza vaccination rates increased from 35 to 53 percent (Table 1A) and PCV13 rates increased from 40 to 60 percent (Table 2); both these increases were statistically significant ($p < 0.01$). Although our immunization rate with PPSV23 did not increase by a significant amount ($p = 0.12$), the absolute number of PPSV23 vaccines administered was 2.5 times higher than the previous calendar year (Table 1B).

Appropriate policies for immunization against influenza and pneumococcal disease were already in place in all hospitals and nursing homes surveyed; no new policies were implemented as a result of this project.

**Discussion**

National immunization rates for those 65 years of age and older during the 2015-16 season were 63.4 and 71.9

![Table 1. (A) Influenza and (B) pneumococcal vaccination rates. PCV13 was not available in the 2014-15 flu season.](image)

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<tr>
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<tbody>
<tr>
<td>Seniors (age 65 and older)</td>
<td>1119</td>
<td>988</td>
<td>1001</td>
</tr>
<tr>
<td>Number vaccinated</td>
<td>320</td>
<td>348</td>
<td>531</td>
</tr>
<tr>
<td>Influenza Vaccine Rate (%)</td>
<td>28.6 %</td>
<td>35.2 %</td>
<td>53.0 % (p&lt;0.01)</td>
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<tbody>
<tr>
<td>Seniors (age 65 and older)</td>
<td>1358</td>
<td>1355</td>
<td>1188</td>
</tr>
<tr>
<td>Number vaccinated (PPSV23)</td>
<td>889</td>
<td>848</td>
<td>779</td>
</tr>
<tr>
<td>PPSV23 vaccination rate (%)</td>
<td>65.4 %</td>
<td>62.5 %</td>
<td>85.6 % (p=0.12)</td>
</tr>
<tr>
<td>Number vaccinated (PCV13)</td>
<td></td>
<td>539</td>
<td>759</td>
</tr>
<tr>
<td>PCV13 vaccination rate (%)</td>
<td></td>
<td>39.7 %</td>
<td>63.9 % (p&lt;.01)</td>
</tr>
</tbody>
</table>
percent for influenza and pneumococcal, respectively. Rates for this age group in South Dakota were better for influenza (76.8 percent) and comparable for pneumococcal (70.5 percent). In our clinic populations, baseline rates fell below the national rate for both diseases. Socioeconomically disadvantaged and refugee populations are less likely to be current in their immunizations. It is likely that the high representation of these populations among the patients of both CFM and FCH at least partially explains this difference. With the low baseline rate, it is perhaps not surprising that the improvement resulting from the quality initiative, while impressive, failed to achieve the target 90 percent or 70 percent immunization rates.

While this intervention did not meet its optimistic goals, immunization rates improved significantly for influenza and PCV13. While not statistically significant, the actual number of PPSV23 vaccines given at CFM was 2.5 times higher than the previous calendar year; this is not evident in the pooled data from both clinic sites on Table 1. In addition, an unforeseen benefit was that awareness was heightened for all age groups, not just patients older than 65.

The project was developed in the hopes that it could be sustained in future years. Its foundation of educating providers, faculty, and patients about the importance of influenza and pneumococcal vaccination in the elderly proved effective. With more education, more patients were identified – or even self-identified – who did not have the recommended vaccinations, and patients appeared to be more willing to receive the immunizations when offered. Resident physicians became more comfortable discussing vaccination with patients, increasing the likelihood they will discuss this with future patients. Improved clinical workflow to document vaccinations for all patients is another lasting benefit. The interventions of letters, posters, and handouts were inexpensive, easy, and noticed by many patients per reports from ancillary staff as well physician observations. We believe this approach is eminently sustainable both economically and logistically.

**Conclusion**

Although the project did not meet its lofty goals, vaccination rates did improve significantly among the target population. We believe this to be highly sustainable for future years.

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**REFERENCES**


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Comparison of Physical Activity by Lifestyle Between Two Rural Pediatric Population Groups

By Lacey A. McCormack, PhD, RD; Jessica R. Meendering, PhD; Natalie W. Thiex, PhD, MPH; Christine W. Hockett, PhD; Howard E. Wey, PhD; Tianna M. Beare, BS; and Bonny L. Specker, PhD

Abstract

Background: Obesity prevalence is higher among rural populations than urban, including youth. Reduced physical activity levels are associated with childhood obesity. It could be assumed that the obesity disparity between rural and urban children is attributable, in part, to differences in physical activity levels; however, previous research quantifying and comparing physical activity levels between rural and urban youth are mixed. Lifestyle may be more important than geographic location in determining physical activity levels. Therefore, the objective of this study was to compare sex and lifestyle group (Hutterite vs. non-Hutterite) differences in physical activity in a free-living, rural pediatric population.

Methods: Youth (n=58) were instructed to wear accelerometers for seven days. Mean percent time in light, moderate or vigorous activity during waking hours was calculated. Two-way ANOVAs and multiple regression models were used for analyses.

Results: Percent time in vigorous activity was significantly greater for Hutterite males than Hutterite females, and Hutterite males had greater percent time in vigorous activity and moderate plus vigorous activity than non-Hutterite males.

Conclusions: There is evidence to support differences in rural lifestyles to be associated with differences in physical activity levels between children living in the same geographic location, particularly among males. Active transportation and having a safe environment for unstructured outdoor play may account for activity and lifestyle differences between the two rural groups.

Introduction

Childhood obesity is a serious public health problem in the U.S. that disproportionately affects rural youth compared to urban youth. Reduced physical activity levels are associated with childhood obesity, and there is evidence for a long-term influence on risk for cardiovascular disease. In addition, physical activity during childhood has direct beneficial effects on bone and muscle, with a lasting impact into adulthood. It could be assumed that the obesity disparity between rural and urban children is attributable, in part, to differences in physical activity levels, however, previous research quantifying and comparing physical activity levels between rural and urban youth are mixed. Existing studies lack high quality, objective assessments of physical activity and detail as to what about rural environments may be facilitating or inhibiting physical activity.

While ‘rural’ has over two dozen federal definitions, differences in lifestyle may be more important than geographic location when defining ‘rural.’ For example, the level of mechanization on a rural farm influences how much physical activity an individual gets while working on that farm, despite farms in general being ‘rural.’ By classifying population groups according to their geographic location, as opposed to their actual lifestyle, key differences in physical activity, and ultimately contributors to obesity, may be missed.
This may be evident when examining differences in body mass index (BMI) Z-scores between rural Hutterite children and children who are rural, non-Hutterites. Among children living in the same counties (and therefore same geographic location), Hutterites had significantly lower BMI Z-scores than non-Hutterites. It is plausible that the differences in BMI Z-scores are attributable to differences in physical activity shaped by lifestyle, as higher physical activity levels have been seen among Old Order Amish and Old Order Mennonite populations compared to modernized populations. The Hutterite Brethren are a religiously-focused communal agricultural society with colonies present in the Dakotas and Montana and north into Canada. Although their agricultural practices are technologically advanced, they keep apart from modern society and maintain elements of a traditional lifestyle. One hallmark of their society is the absence of modern electronic entertainment such as computers and televisions in their homes. Additionally, the remote colony setting provides a safe environment for children to play outdoors, and year-round outdoor play is encouraged. Together, a lack of screen time, in addition to home, school and other resources being available on the colony, may contribute to differences in physical activity between Hutterites and rural populations. Therefore, the objective of this study was to compare sex and lifestyle group (Hutterite vs. non-Hutterite) differences in physical activity in a free-living pediatric population. We hypothesized that Hutterite children would have higher activity levels because of increased lifestyle-related opportunities for unstructured physical activity and the absence of electronic entertainment that encourages less active behaviors.

Methods
Study Protocol and Subjects
All protocols and procedures were reviewed (expedited) and approved by the Institutional Review Board. In 2008, a convenience sample totaling 63 children aged 4-15 years was recruited from one non-metro (rural) county in eastern South Dakota by fliers sent home from school, word-of-mouth, or in-person (on Hutterite colonies). Parents gave written consent. Children older than 8 years gave written assent, and children younger than 8 years gave verbal assent. Research staff met with participants and instructed them and their parents on the study protocol. A short questionnaire was used to obtain basic data such as birth date, presence of chronic illnesses, and medication use. Height and weight were measured in duplicate.

Accelerometers were used to assess physical activity. The participants were instructed to wear the accelerometer on the belt around their waist for a total of seven days, taking it off in the evening before going to bed and putting it back on each morning. They were instructed to wear the activity belt at all times during the day except during wet activities such as swimming or bathing. The participants were asked to record in an activity log the time of day the activity belt was put on and taken off and any unusual circumstances or problems they may have experienced. Parents were asked to help younger children remember to put their activity belt on and record results. Data were collected in all participants during the same time period (summer) to reduce the impact of season on physical activity levels.

Accelerometer
The Actiwatch activity monitor (Model AW2, Mini Mitter Company, Inc., Bend, OR) contains an omni-directional sensor capable of detecting acceleration in two planes. The sensor integrates the degree and speed of motion to produce an electrical current of variable magnitude. The monitor stores this information as activity counts per a predetermined time interval (Mini Mitter Company, Inc. Actiwatch Instruction Manual). Participants were instructed to position the activity belt so that the base of the accelerometer was positioned against the spine. This orientation allowed for sensing of body acceleration during forward/backward and left/right motions. For this study, the monitors were programmed to store activity counts in 2-minute intervals for a total of seven days. Using the Actiware 3.4 software, activity counts were downloaded. Activity levels of 1000 counts/min or greater were categorized as vigorous activity, 500-999 counts per minute were categorized as moderate activity, 1-499 counts per minute were categorized as light activity and 0 counts were categorized as no activity. These categories were determined by a previous validation study consisting of 6 hours direct observation of 40 children 3 to 5 years of age in free-living conditions using the Children's Activity Rating Scale (CARS). The CARS instrument ranks children's activity on a scale of 1-5 with levels 3-5 involving translocation. In the validation study, one-minute intervals with activity levels of 1000 counts per minute or greater corresponded to a CARS score of 5 and were classified as vigorous activity. Mean percent time in light, moderate or vigorous activity was calculated by averaging percent time spent in the respective activity category for each day of the study.
Mean percent time in any activity includes time spent in light, moderate and vigorous activity.

Statistical Analyses
Z-scores were calculated for participant height, weight and body mass index (BMI) based on age-specific population school data in a seven-county area using data from the South Dakota Department of Health.\textsuperscript{11} JMP statistical software (version 7.0.1; SAS Institute, Cary, NC) was used and two-way ANOVAs were performed to compare anthropometric measures and activity measures by group (Hutterite and non-Hutterite), sex and group-by-sex interaction. In situations where the group-by-sex term was statistically significant, pairwise comparisons of least square means were determined by Tukey HSD post hoc analysis. Z-scores were tested to assess statistical difference from zero using Student’s t-test. Multiple regression models were used to compare activity between males and females by population group adjusting for age.

Results
There were a total of 63 participants (31 females) (Figure 1). Forty-one of the participants were Hutterites (22 females) and 22 were non-Hutterites (nine females). Three Hutterite children were excluded due to chronic illness and two non-Hutterite children were excluded because they were missing the activity log. Without the activity log there was no evidence for adherence to the study protocol. Details of participant protocol adherence and instrument malfunction for the 58 final participants are included in Table 1. Of the 58 participants, three participants’ accelerometers had no recoverable data and one participant’s accelerometer recorded erroneous data resulting in a total of 28 person-days of lost accelerometer data. A total of 12 participants forgot to wear the activity belt on one or more days of the study resulting in 24 person-days of lost accelerometer data. Out of a possible total of 406 person-days of data, there were 354 person-days of accelerometer data (87.2 percent). Daily averages of activity measures from participants with partial data (at least one usable day) were calculated from the accelerometer data that were available.

Sex, Age and Group Differences In Physical Activity
General anthropometric and activity measurements of study participants are shown in Table 2 by group and sex. Participants were between 4 and 15 years old with a mean age of 9.0 years. Mean age, weight, and BMI did not differ by group or sex. Male and female Hutterite and female non-Hutterite participants had age-specific BMI Z-scores that were significantly less than zero. Hutterite children were slightly taller than non-Hutterite children, but age-specific height Z-scores did not differ between the two groups indicating that height differences could be attributed to age differences. Female non-Hutterite participants had a height Z-score that was significantly less than zero.

There was a significant sex-by-group interaction for mean percent time in vigorous activity based on the accelerometer data. Percent time in vigorous activity was greater for

![Figure 1. Recruitment diagram. Number and sex of Hutterite and Non-Hutterite children recruited and excluded.](image-url)
Table 1. Physical activity data collection adherence among a pediatric sample of Hutterites and non-Hutterites (n=60).

<table>
<thead>
<tr>
<th></th>
<th># Participants</th>
<th>Days Affected</th>
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<tbody>
<tr>
<td>Accelerometer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>no data[^1]</td>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td>erroneous data[^1]</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>did not wear activity belt</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>52</td>
</tr>
<tr>
<td>Usable data</td>
<td>54</td>
<td>356 person-days (87.2%)</td>
</tr>
</tbody>
</table>

[^1]: All seven days of the participants’ data were affected.  
[^2]: One participant’s accelerometer malfunctioned and the same participant also forgot to wear the activity belt on two days.

Table 2. Anthropometric and physical activity measures among pediatric female and male Hutterites and non-Hutterites (n=58).

<table>
<thead>
<tr>
<th>Anthropometric Measures</th>
<th>Hutterite</th>
<th>Non-Hutterite</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F (n=20)</td>
<td>M (n=18)</td>
<td></td>
</tr>
<tr>
<td>Mean Age (y)</td>
<td>10.0 ± 0.6</td>
<td>8.7 ± 0.7</td>
<td>NS</td>
</tr>
<tr>
<td>Height</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (cm)</td>
<td>141.1 ± 4.3</td>
<td>131.2 ± 4.5</td>
<td>0.08</td>
</tr>
<tr>
<td>Z-score</td>
<td>0.0 ± 0.2</td>
<td>-0.4 ± 0.2</td>
<td>NS</td>
</tr>
<tr>
<td>Weight[^1]</td>
<td>36.7 ± 3.1</td>
<td>31.2 ± 3.3</td>
<td>NS</td>
</tr>
<tr>
<td>Z-score</td>
<td>-0.4 ± 0.2</td>
<td>-0.4 ± 0.2[^1]</td>
<td>NS</td>
</tr>
<tr>
<td>BMI[^*]</td>
<td>17.7 ± 0.8</td>
<td>17.3 ± 0.8</td>
<td>NS</td>
</tr>
<tr>
<td>Z-score</td>
<td>-0.5 ± 0.2[^1]</td>
<td>-0.4 ± 0.2[^1]</td>
<td>NS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical Activity Measures</th>
<th>Hutterite</th>
<th>Non-Hutterite</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accelerometer[^*]</td>
<td>(n=20)</td>
<td>(n=15)</td>
<td></td>
</tr>
<tr>
<td>% in light</td>
<td>28 ± 1.4</td>
<td>23 ± 1.7</td>
<td>NS</td>
</tr>
<tr>
<td>% in moderate</td>
<td>10 ± 0.6</td>
<td>10 ± 0.7</td>
<td>NS</td>
</tr>
<tr>
<td>% in vigorous</td>
<td>12 ± 1.4[^1]</td>
<td>18 ± 1.6[^b]</td>
<td>0.01</td>
</tr>
<tr>
<td>% in MVPA</td>
<td>22 ± 1.6[^a]</td>
<td>28 ± 1.9[^a]</td>
<td></td>
</tr>
</tbody>
</table>

[^1]: Weight was missing for one male non-Hutterite. Thus, n=11 for that category for mean weight, weight Z-score, BMI and BMI Z-score.  
[^2]: Denotes significantly different from zero (p<0.05).  
[^3]: Tukey’s HSD post hoc analysis indicated no significant difference among individual groups.  
[^*]: Values expressed as % of time during waking hours.
Hutterite males than Hutterite females, whereas there was no sex difference for non-Hutterites. Hutterite males had greater percent time in vigorous activity and moderate plus vigorous activity than non-Hutterite males (Table 2). These relationships remained significant after adjusting for age. Body mass index was not a significant predictor of mean percent time in any of the accelerometer summary variables, and inclusion of BMI in the models did not alter results significantly.

**Discussion**

While ‘rural’ populations are typically defined by their geographic locations, the role that a rural lifestyle contributes to physical activity levels, particularly among children, is unclear and warrants investigation given the obesity disparity between rural and urban children. As such, the purpose of this study was to examine physical activity measured by accelerometer in mixed-sex Hutterite and non-Hutterite pediatric rural population groups in Eastern South Dakota. Consistent with our hypothesis, comparison of activity levels within the study population showed associations between physical activity levels and sex that differed by population group (Hutterite vs. non-Hutterite).

We hypothesized that Hutterite children would be more active than non-Hutterite children due to lifestyle differences, particularly in terms of access to electronic devices and time spent in unstructured physical activities. We did indeed find differences in physical activity among males. Male Hutterite children were more active than male non-Hutterite children in mean percent time in vigorous activity and percent time in moderate plus vigorous activity. Other reports have also found that religious communities that have preserved a traditional rural lifestyle, such as Old Order Amish and Old Order Mennonite, have increased physical activity compared to modernized communities, likely due to farm chores, active transportation and lack of technology. On the contrary, a meta-analysis showed only a small negative relationship between television and physical activity in mainstream populations, therefore lack of television watching in Hutterites, specifically, may not explain the activity differences between the two male population groups. However, other aspects of a traditional, rural lifestyle, such as participation in household and farm chores, the safety of the colony setting for unstructured outdoor play, or rural isolation may promote physical activity among males. These potential facilitators of physical activity among male Hutterites may not apply to females, however, as there was no difference in activity levels between female Hutterites and non-Hutterites. Future work should assess types of physical activities and sedentary activities, as well as barriers to and facilitators of physical activity, in addition to physical activity levels themselves, in order to better understand what a traditional, rural lifestyle looks like among children, particularly between genders.

Physical activity levels associated with a rural lifestyle warrant further investigation not only because of the relationship between physical activity and obesity, but also because of the relationship between physical activity and bone health. McCormack et al. categorized rural adults according to the level of mechanization on the farm they grew up on (low, medium and high mechanization) and found that simply living a less mechanized (and therefore more physically active) rural lifestyle as a child led to differences in bone mineral density in adulthood. As all of these adults were considered to be ‘rural,’ these differences in lifestyle and physical activity differences would have been missed if simply examining ‘rural’ versus some other population. In future research among rural populations, nuances that ascertain differences in rural lifestyles should be explored. For example, within a certain rural zip code, does an individual live in town or out of town? Do they live and work on an active farm? Does a family member work in town? These questions will provide more information about what may be influencing lifestyle and physical activity practices beyond geographic location.

While this study provides valuable information about how a rural lifestyle is associated with physical activity levels among children, there are several limitations that should be noted. First, we used a convenience sample for our non-Hutterite population group. These participants may be more active than the general non-Hutterite population. This is supported by the fact that the average BMI for female non-Hutterites in our sample is significantly less than the regional population average. Our definitions of light, moderate and vigorous activity for the accelerometer may not be valid given current methods of quantifying physical activity data using accelerometry, as there was no minimum standard for wear time compliance used and a consistent epoch period as well as one set of cut-points were used across all ages. However, the accelerometers were calibrated and the data were analyzed using appropriate techniques at the time of data collection, and had been validated against direct observation of activity.
Although we recognize the validity of the physical activity data as a limitation of this study, it is the difference in activity between groups (not the absolute volume of activity) that is the primary outcome of this manuscript.

In conclusion, there is evidence to support differences in rural lifestyles to be associated with differences in physical activity levels between children living in the same geographic location, particularly among males. While lack of screen time may play a role, farm-related chores, active transportation and having a safe environment for unstructured outdoor play may account for activity and lifestyle differences between the two rural groups. Further work is needed to examine physical activity levels among rural populations using up-to-date, objective techniques, paired with appropriate questionnaires that document types of physical and sedentary activities being performed. This information will enhance our understanding of how lifestyle behaviors are impacting physical activity levels among rural populations, ultimately contributing to the obesity disparity between rural and urban population groups.

Acknowledgement: This work was funded by the Ethel Austin Martin Endowed Program in Human Nutrition at South Dakota State University.

REFERENCES


Please note: Due to limited space, we are unable to list all references. You may contact South Dakota Medicine at 605.336.1965 for a complete listing.
Collateral Flow Reversal: Exploring Protective Role of Collateral Circulation in Acute Coronary Syndrome

By Udit B. Bhatnagar, MD; Gavin Nelson, MS; and Adam Stys, MD

Abstract
The effect of pre-existing collateral circulation on presentation of acute coronary syndrome (ACS) is not well known. We present a case of a 54-year-old male with a known history of chronic total occlusion of left circumflex artery and well-developed collaterals, who presented to the emergency department with non-ST-segment elevation myocardial infarction. He underwent urgent coronary angiogram which showed an acute total thrombotic occlusion in proximal large right coronary artery with collaterals from left to right. After percutaneous coronary intervention, the collaterals reversed to a right to left direction. We postulate that the well-developed collateral circulation protected the patient from larger transmural ischemia and ST elevation myocardial infarction.

Introduction
In the last decade there has been growing interest in studying the effect of chronic total occlusion (CTO) and collateral circulation in the setting of acute coronary syndrome (ACS). Presence of a CTO in setting of ACS has been previously shown to be independently associated with excess mortality and reduced left ventricular ejection fraction.1,2 However, in presence of CTO, well developed collateral circulation in animal model studies demonstrated a protective effect in reducing ischemic injury by maintaining coronary flow in retrograde direction.3 There has been growing interest in studying the physiological significance of collateral circulation in patients with CTO. Studies have suggested that presence of chronic collaterals to an occluded area mitigates ischemic injury to myocardium.4-5 Poorly developed collateral flow was shown to be an independent predictor of cardiac mortality in a prospective study among patients with stable coronary artery disease.6 This report describes a case of ACS with relatively mild electrocardiographic changes and biomarker elevation – where angiography demonstrated large proximal epicardial artery occlusion and reversal in collateral flow which supplied the acutely occluded artery, possibly protecting the myocardium from significant transmural ischemia.

Case Presentation
A 54-year-old Caucasian male presented to the emergency department with sudden onset atypical chest pain and syncope. He had a history of mild systolic dysfunction and a known, angiographically documented, left circumflex (LCx) CTO which was medically treated. On presentation, an electrocardiogram (EKG) revealed signs of ischemia with 1mm ST depressions and T-wave inversions in the lateral chest leads (Figure 1). Cardiac troponin was elevated to 1.0 ng/ml (reference normal range <0.03 ng/ml). He was taken urgently to the cardiac catheterization lab. Coronary angiogram revealed acute thrombotic total occlusion of the proximal right coronary artery (RCA) (Figure 2) and previously known CTO LCx with moderate disease elsewhere. Collateral blood flow was noticed from the left coronary system to right coronary artery (Figure 3). He underwent complex angioplasty and placement of drug-eluting stent (3.5 x 28 mm followed by 3.5x15 mm) in the acute proximal RCA with good angiographic flow post-intervention (Figure 4A). Post-intervention angiography showed reversal of collateral circulation, now to a right to left flow (Figure 4B). The echocardiogram showed an ejection fraction of 45-50 percent which was unchanged from previous years. Subsequently, the patient did well clinically with minimal
anginal symptoms, eight weeks post-operatively and it was elected to manage the residual CTO of RCA medically.

Discussion
Collateral vessels usually develop in a setting of coronary CTO to provide an alternate route for blood flow to ischemic myocardium. However, the protective role of pre-existing collateral circulation in acute coronary syndrome has been controversial. Acute coronary syndrome with total thrombotic occlusion of epicardial coronaries typically presents electrocardiographically as ST elevation myocardial infarction (STEMI) due to acute transmural ischemia. Our patient presented with non-STEMI with relatively mild elevation of biomarkers; however, coronary angiogram revealed a complete thrombotic occlusion to a large proximal RCA. We also noticed well

Figure 1. EKG on admission showing sinus rhythm and 1mm ST-segment depressions in lateral chest leads.

Figure 2. Acute complete thrombotic occlusion of proximal right coronary artery.

Figure 3. Left coronary injection in RAO Caudal projection showing (A) CTO of LCx artery; (B) left to left and (C) left to right collateral circulation.
developed collateral circulation supplying the occluded RCA territory from the left coronaries, which reversed direction of flow after revascularization. This supports previous studies which suggests benefit of collateral circulation in reducing the extent of acute ischemia.

Traditionally, collateral circulation has been graded based on Rentrop classification. It differentiates four grades of collaterals: Grade 0 – with no collaterals; Grade 1 – filling of side branches without visualizing the main epicardial artery; Grade 2 - partial filling of the main epicardial recipient artery; Grade 3 - complete filling of the main epicardial artery by collateral circulation. Degree of collateral recruitment and flow has been linked to severity of coronary stenosis, with CTO lesions having the most developed collateral flow compared to non-occlusive lesions.

Presence of collaterals and its effect in stable CAD has been explored. In a study of patients with stable coronary artery disease (CAD), followed prospectively for two years after coronary angiography, showed protective effect of collateral circulation in terms of higher event free survival rate. Using quantitative collateral flow measures too, presence of well-developed collaterals was shown to reduce cardiac mortality. Other studies have shown inverse relation between the degree of collateral circulation and myocardial injury.

Studies have also explored role of collateral circulation in ACS. In a study of 1,059 patients presenting with STEMI, presence of angiographically detected collaterals had protective effect on infarct size, microvascular myocardial perfusion and hemodynamic conditions. Elias et al. showed the importance of collateral circulation in STEMI patients with a concomitant CTO. Four hundred thirteen STEMI patients with a single concomitant CTO were divided into well developed and poorly developed collateral circulation groups. Patients with well-developed collateral circulation had a better five-year survival rate than patients with poorly-developed collateral circulation (74 vs. 64 percent; p= 0.01). Absence of collaterals has also been shown to be an independent predictor of cardiogenic shock and mortality.

Although the exact mechanism of beneficial effect of collaterals is unknown – Increased collateral flow is thought to ameliorate the acute reduction of coronary blood flow and thus decrease the extent of myocardial ischemia in the setting of ACS. Studies evaluating factors promoting collateral recruitment – both by physical exercise or therapeutic angiogenesis are underway, in an effort to improve myocardial perfusion especially in lesions which are unable to be revascularized “traditionally.” However, hemodynamic studies and direct assessment of collateral flow has shown limited extent and flow reserve of even well-developed collaterals in maintaining myocardial perfusion. Therefore, in presentation of acute coronary occlusion, urgent revascularization of the affected
epicardial artery remains the most efficient method to achieve adequate myocardial perfusion.

Conclusion
Well-developed collateral coronary circulation seems to have a protective effect in acute coronary syndromes in terms of reduction of ischemic burden due to retrograde collateral supply to area of coronary distribution. We described a case of ACS with complete coronary occlusion, who had angiographically demonstratable retrograde flow through previously present collaterals, which likely contributed to prevent large transmural ischemia. After revascularization of the occluded epicardial artery, the collateral flow promptly reversed back to original state.

REFERENCES

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

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Medications used appropriately can alleviate symptoms that compromise a patient’s well-being, help prevent the onset of a disease, and improve health outcomes. Unfortunately, medications are frequently not taken as prescribed. Medication non-adherence is defined as not taking medication(s) as directed by a healthcare provider. Primary non-adherence occurs when patients either do not fill a prescription or fail to pick it up. Secondary non-adherence occurs when prescriptions are filled and picked up, but the medication is not taken as directed. Medication non-adherence is a multifaceted problem, and the rural nature of South Dakota adds additional challenges. With 27 percent of Americans being non-adherent to some degree, the risk of morbidity and mortality is great but can be effectively addressed. Non-adherence often translates to increased health care costs, poor medical outcomes, increased hospitalization rates, and greater insurance premiums. On the contrary, adhering to medication therapy reduces the overall cost of health care, improves life expectancy, clinical outcomes, and quality of life.

Patients face many challenges on the path to medication adherence, and medication-taking behavior varies across patients. Poor health literacy, medication regimen complexity, language barriers, poor patient-provider trust, motivation to comply, socioeconomic status, access to pharmacy services, and mental illness can create barriers preventing patients from taking their medications. Understanding the specific barriers that impact a patient’s adherence and tailoring interventions to overcome these barriers are vital for fixing medication non-adherence.

The onus of medication adherence does not lie solely on patients. Physicians may prescribe a plethora of medications, yet may not have time to explain the risks versus benefits. In tackling this issue, many stakeholders can help. Having practitioners prescribe medications the patient can afford is key, but this alone doesn’t solve the problem. Pharmacists can help by offering medication synchronization programs and adherence packaging. These services minimize the need for multiple trips to the pharmacy and organizes the patients’ medications, thereby preventing medication overdosing and underdosing. Medication therapy management (MTM) is a service or a group of services offered by pharmacists to help educate patients on their regimen. However, these services are rarely prioritized over the dispensing functions performed at a pharmacy. Pharmacies that offer these services usually pick and choose a sampling and offer them to patients upon request. Given the positive impact of these services on non-adherence, readmission rates, and outcomes, it is important to assess why these services aren’t a mainstay of practice.

Together with staffing and workflow challenges, a major barrier for the lack of service offerings is reimbursement. This is often problematic when clinical services are offered in a community setting where reimbursement is tied to dispensing scripts. Although MTMs were shown to improve patient outcomes, reduce hospital readmissions, and other healthcare costs, it wasn’t until the Centers for Medicare and Medicaid Services (CMS) offered reimbursement for conducting MTMs under Part D that the practice was adopted on a larger scale. This revealed an important stakeholder, the payers. When payers see the financial viability and return on investment (ROI) tied to a product or a service, they are more likely to offer reimbursement. This then allows pharmacy staff to invest time and resources to provide beneficial services to patients with chronic conditions.

In South Dakota, for instance, 8 percent of adults have diabetes; this increases to 15 percent in the American Indian population. Also prevalent is cardiovascular disease, which is the second leading cause of death statewide, accounting for 27.5 percent of deaths. Managing patients with chronic conditions requires coordination.
fragmentation of care and practice silos have compounded the problem of optimizing care. Recent efforts to reform health care have provided excellent opportunities to begin integrating these silos. For instance, the patient-centered medical home (PCMH) model utilizes a health care delivery system to provide patients with a team of providers tailored to their needs. Another case of this coordination would be Accountable Care Organizations (ACOs). Both of these examples illustrate successful practice models for delivering the best care possible to patients. Although, in many instances the transitions in care have not been very effective. For example, the multidisciplinary team approach used in hospitals has decreased patient morbidity and mortality and increased patient and employee satisfaction. Each team player uses their knowledge to benefit the patient. Even so, during transition of care from the hospital to the community, there is an abrupt break in care. The patient goes from having a team of providers to having a disjointed network of providers covered under their insurance or those that are easily accessible to them.

The bulk of the patients’ disease state management falls to their primary care physicians, whom they see infrequently due to physicians’ already strained workloads. If a team structure were in place, other members of the team could manage approximately 77 percent of preventative care services and 47 percent of chronic care services that physicians currently have to handle. Unfortunately, a lack of continuity in electronic health records, shared space, reimbursement, and general team organization are some of the currently known barriers to developing a team-based approach in a community setting. Community pharmacies very rarely have access to a patient’s diagnosis, medications or allergy lists to make recommendations and assess interactions. When dieticians see patients, they don’t know if there could be problematic drug or food allergies or interactions, such as when recommending a diet high in green leafy vegetables for a patient recently prescribed warfarin. When physicians see patients, they might not be aware of a medication prescribed by a specialist. If a system were in place where some of the burden on physicians is distributed among other members of the team, such as pharmacists, nurses, dieticians, social workers, etc., this would allow patients to receive more...
harmonious care, and each member of the healthcare team could successfully manage the patients’ treatment plans, based on their specific areas of expertise.

Recognizing this need, the Centers for Disease Control and Prevention (CDC) released a call to action through CDC Request For Application 1815 - Improving the Health of Americans Through Prevention and Management of Diabetes and Heart Disease and Stroke. This project supports state investments in implementing and evaluating strategies to prevent and manage cardiovascular disease and diabetes. In response to this call, the South Dakota State University College of Pharmacy and Allied Health Professions, in partnership with the South Dakota Department of Health, proposed a five-year plan to work with various stakeholders to develop innovative programs that improve patient care and outcomes. During the first year, the project will conduct a landscape analysis of patients, practitioners, and payers to identify resource needs, gaps and barriers in care. The second year will focus on coordination of care by developing programs with collaborating entities to optimize care pathways that improve medication non-adherence and positively impact health outcomes. Also, educational initiatives would be established at the varying stakeholder levels to promote patient-centered care and ensure clear pathways to effective reimbursement. In the third year, these newly developed models will be implemented. The fourth year will focus on evaluating the outcomes of the developed programs. This will be done by tracking outcomes and monitoring for continuous quality improvement. Prior to the start of the fifth year, programs will be modified based on the lessons learned from year four. The goal of the fifth year will be to assess sustainability and financial viability of these programs. At the end of the five-year period, this project would have built programs that break down practice silos, and bring the best and most accessible care possible to South Dakotans with diabetes and cardiovascular disease.

REFERENCES

10. Avorn J, Monette J, Lacour A et al. Persistence of use of lipid-lowering medica-

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PrEP: Pre-Exposure Prophylaxis

HIV infections can be prevented, and there is a new prevention option called pre-exposure prophylaxis or PrEP. PrEP involves taking a single pill a day to avoid acquiring HIV. The only medication currently approved by the FDA for PrEP is co-formulated emtricitabine/tenofovir. This regimen can reduce the risk of HIV infection by up to 92 percent when taken consistently once a day. This medication is FDA approved for adolescents and adults weighing 77 pounds or more. PrEP does NOT replace other risk reduction options, such as reducing the number of risk exposures, using condoms consistently, and ensuring that partners with HIV are on antiretroviral treatment. However, this medication will assist many patients for whom traditional risk reduction options may be insufficient to prevent HIV infection.

The National Clinicians Consultation Center provides information and assistance to clinicians wishing to prescribe PrEP by calling 1-855-448-7737 (1-855-HIV-PREP), Monday through Friday, 10 a.m. to 7 p.m. CT. Any licensed clinician with prescribing privileges can prescribe PrEP.

Are you a PrEP friendly provider? If so, please consider adding your information to https://preplocator.org, to let community members know. If you would not like your information public, but would like the South Dakota Department of Health to know you are PrEP friendly, please contact us. If you have a patient who is interested in PrEP, but doesn’t know where to start, our staff can assist. Please call Erin Powell, HIV Linkage to Care Coordinator, at 605-773-5348.

Building Links to Care Colonoscopy Access for Community Health Center Patients

By Jill Ireland, MPA, American Cancer Society

Colorectal cancer is the second leading cause of cancer death for men and women in South Dakota. The American Cancer Society estimates that 430 South Dakotans will be diagnosed with colorectal cancer in 2019. Multiple screening tests are available, but individuals of lower socioeconomic status and those without health insurance have limited access to colorectal cancer screening and follow-up diagnostic services. South Dakota counties have the widest screening gaps with a 29-point difference between the counties with the highest and lowest colorectal cancer screening rate.

Community health centers (CHCs) provide access to affordable high-quality healthcare in areas of the Dakotas that need it the most. CHCs serve as the primary medical home for more than 68,000 South Dakotans living in rural and medically underserved areas. Forty-two delivery sites provide comprehensive primary care services as well as education, translation and transportation to individuals and families based on the ability to pay. CHCs report that lack of access to specialty care is one of the main barriers providers face when recommending colorectal cancer screening to patients.

Utilizing a partnership model called Links to Care, the American Cancer Society is leading an effort to bring CHCs, proceduralists and health systems together to build medical neighborhoods for colonoscopy services. “Links to Care models around the country have shown that effective coordination between community health centers and specialists can improve healthcare delivery to underserved patients,” said Laura Makaroff, MD, director of cancer control interventions for the American Cancer Society in Atlanta. “These models have relied on strong care coordination, physician champions as well as balanced distribution of patient load for donated care.”

South Dakota healthcare stakeholders convened on February 28 to identify opportunities to improve access to colonoscopy through medical neighborhood partnerships. Thanks to the national campaign to reach 80 percent colorectal cancer screening by 2018, the healthcare leaders had signed the 80 percent pledge to take steps to prevent colorectal cancer in their community.

The South Dakota Department of Health shared county-level data showing that colorectal cancer screening, incidence and mortality rates vary by geography. A community needs assessment with stakeholders from across the state found that cost was the most common barrier to colonoscopy access. To further identify the problem’s scope, CHCs used 2017 colorectal cancer screening rates to estimate an annual colonoscopy need of 168 for uninsured patients. Following the presentations, the participants brainstormed solutions to improve colonoscopy access. Strategies discussed included securing donated and reduced cost procedures, exploring hospital charity care, utilizing screening navigation and expanding Medicaid.

To learn more about Links to Care and to join the effort to improve colorectal cancer screening, contact Jill Ireland (jill.ireland@cancer.org) at the American Cancer Society.

REFERENCES
My first experience with cardiopulmonary resuscitation was during the summer of 1969. I was an orderly in a Minneapolis intensive care unit (ICU) when my patient stopped breathing. I called for help and provided mouth-to-mouth breathing and chest message until the team arrived. Later the doctor told me I saved the patient’s life, further convincing me that medicine was my life’s purpose.

Cardiopulmonary resuscitation (CPR) is the act of rhythmically pushing on the chest and breathing into the mouth of a person whose heart beat and breathing has ceased. CPR can result in enough circulation to keep the victim alive until spontaneous circulation and breathing resumes.

In 1740, the French described how mouth-to-mouth breathing sometimes saved drowned people, and, through the early 1900s, mouth-to-mouth breaths were given to bring lifeless newborns around. In the mid-1950s, two anesthesiologists, Dr. Elam and Dr. Safar, with help from the Red Cross, began promoting mouth-to-mouth resuscitation for adults discovered in cardiac arrest. In 1960, chest compressions were proven valuable in preserving circulation, especially to the brain, and even more important for survival than artificial respiration. In fact, rapid (100-120 per minute), constant, three to four-inch chest compressions (without artificial breathing) are now recommended for patients having out-of-hospital cardiac arrest.

In 1947 a Cleveland surgeon used an internal (open chest) defibrillator to save a 14-year-old boy, and in 1955, Boston cardiologist, Paul Zoll, developed the now popular external (on skin) defibrillator. Studies show that the defibrillator is even more important than chest compression. With available automated external defibrillators (AEDs) and education on how to perform CPR and use AED devices, we have even better outcomes.

For those having a cardiac arrest, the sooner they get defibrillation, effective CPR, and a 911 call for help, the greater the chance of functional recovery. Out-of-hospital successful survival after CPR is about ten percent but increases to 35 percent when the arrest is witnessed and the victim is provided early defibrillation. The sad news is that more than 50 percent of those who could benefit will not have CPR because bystanders fear they might do something wrong. The big mistake is NOT TO TRY.

Simple, first-level, CPR courses are available for anyone interested in every community and through the internet, while AED devices are popping up in almost every community gathering area. Please notice where they are placed. Trust me, if someone has a cardiac arrest, and you try to help, you might just save a life.
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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.

Any amount can be donated at any time throughout the year. If you have questions or want more information, please call 605.336.1965.

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2019 SDSMA Annual Leadership Conference – Sponsorship & Advertising Opportunities!

The SDSMA Annual Leadership Conference is a perfect opportunity for organizations of all sizes to advertise their products and services to current and potential customers. The conference will be held May 31 at the Hilton Garden Inn Downtown Sioux Falls. As a sponsor or advertiser, you will have the opportunity to market your technologies, services, pharmaceuticals and other products. This is a valuable opportunity to reach key health care leaders from across South Dakota.

Diamond sponsors have the opportunity to attend the membership mixer and awards banquet to visit with physician members. Sponsorship and advertising options are available in many varieties to meet the needs of all organizations.

Check out the all of the sponsorship and advertising opportunities at sdsm.org. Check out the meeting registration form and reach South Dakota physicians.

If you have any questions or need additional information about the meeting, please call the SDSMA office at 605.336.1965 or email Elizabeth Reiss at ereiss@sdsm.org.

Registration Now Open – 2019 SDSMA Annual Leadership Conference

Registration is now open for the 2019 SDSMA Annual Leadership Conference!

Join us Friday, May 31 at the Hilton Garden Inn Downtown Sioux Falls.

Learn more, see a full schedule, and register at sdsm.org.

With presentations, discussions, networking opportunities and social events, the Annual Leadership Conference is a great time to share ideas and learn from fellow members. The conference is a benefit of your membership. Registration is free, with tickets for the banquet and SDSMA PAC Lunch available for purchase.

Submit a Policy Issue & Participate in Open Forum During 2019 Annual Leadership Conference

Do you have a policy issue you'd like to bring to the SDSMA's attention? Make plans to address the SDSMA Policy Council. Visit sdsm.org for a submission form.

Completed forms must be returned to the SDSMA office by May 10. The open forum will be held at 1:30 pm May 31 at the Hilton Garden Inn, Downtown Sioux Falls during the SDSMA Annual Leadership Conference.

Check out the entire schedule of events taking place during the annual conference and register at sdsm.org.

CDL Medical Exams – Become Certified

Commercial motor vehicle drivers are required to have their medical exams performed by a certified medical examiner who is listed on the National Registry of Certified Medical Examiners.

Visit a link at sdsm.org to register to take the exam to become certified. The exam is fully online. Those who register before March 31 will receive 10 percent off. Enter promo code SPRING10 at checkout to receive the discount.

- Six months unlimited access to complete from your PC, laptop, tablet, or other mobile device
- Course certificate available immediately upon completion
- Registrants have a 99 percent pass rate for the national exam

Receive the following:

- Nine training modules, ranging from 40-90 minutes
- Suggestions for pre-course reading/reference materials
- Case studies and preparation steps for the certification exam
Legal Brief Highlight: Public School Attendance Policies and Verification of Absences

Some school districts in South Dakota have policies concerning student absences and tardiness. These policies may require schools to verify a student’s absence from a doctor, dentist or other professional.

The HIPAA-mandated medical privacy rules generally prohibit the release of protected health information (generally defined as individually-identifiable information concerning a person’s health or treatment) without an authorization that complies with federal privacy rules, a court order, an appropriately-issued subpoena or “as otherwise required by law.”

Information concerning a student’s illness should only be released by a physician 1) directly to the student if he or she is 18 or older, 2) directly to the parent or legal guardian, 3) to the school pursuant to an Authorization for Release of Information signed by a parent or legal guardian of a student younger than 18, 4) pursuant to a court or administrative order, or 5) pursuant to a subpoena that complies with the federal privacy rules. Information should not be released directly to the school if there is no Authorization form.

For more, download the SDSMA legal brief Public School Attendance Policies and Proof of Illness at sdsma.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.

For Your Benefit:

Fighting for You and Your Patients

The SDSMA serves as your vehicle for advocacy for your patients and the art and science of medicine through lobbying at the state and federal levels, grassroots activity, and legal initiatives.

SDSMA PAC is your grassroots avenue that works to impact public policy decisions through partisan political participation. SDSMA PAC supports and elects pro-medicine candidates on the state level. Members of the SDSMA and their spouses can join SDSMA PAC.

The SDSMA’s motto is “Values, Ethics, Advocacy.” We take our advocacy role to heart. With your help, SDSMA and SDSMA PAC have the opportunity to dramatically impact the political and legislative process to create meaningful changes in South Dakota’s current health care system:

• Improving health and access to care in rural areas;
• Increasing Medicaid reimbursement;
• Promoting Medicare physician payment reform and stopping reimbursement cuts;
• Working to improve clinical quality and patient safety;
• Partnering with state agencies to tackle regulatory, socioeconomic, public health and scientific policy issues;
• Advocating for public health immunizations;
• Promoting adequate funding for medical education;
• Stopping inappropriate expansion of non-physician scope of practice;
• Defending the patient-physician relationship; and
• Reforming medical liability.

If you would like to become involved in any of our advocacy programs, call 605.336.1965 or visit sdsma.org.

“For Your Benefit” is the SDSMA’s monthly update on programs and services available to physicians through their affiliation with the SDSMA.
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• A 24/7 risk management hotline **staffed by physicians** for guidance in urgent situations.
• An array of **educational activities** that include in-person seminars, on-demand courses, and multi-day conferences.
• Frequency of claims among COPIC insureds is 30% less than the national average.
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• **On-site reviews that identify high-risk areas** and best practices to address these.

For more information, please contact Jerry O’Connell at joconnell@copic.com or (844) 858-1411.

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- Colorado Medical Society
- Iowa Medical Society
- Minnesota Medical Association
- Nebraska Medical Association
- North Dakota Medical Association
- South Dakota State Medical Association
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