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Webster defines professionalism as “conduct, aims, or qualities that characterize or mark a profession or a professional person.” The American Board of Internal Medicine in its physician charter defines medical professionalism this way: “Professionalism is the basis of medicine’s contract with society. It demands placing the interests of patients above those of the physician, setting and maintaining standards of competence and integrity, and providing expert advice on matters of health.”

It continues by listing three fundamental principles:


2. Principle of patient autonomy. Physicians must be honest with patients and empower them to make informed decisions.

3. Principle of social justice. The medical professional must promote justice in the health care system including the fair distribution of resources.

The document goes on to list a set of 10 professional responsibilities. I hope you will consider these ideas and reflect on how they are or could be a part of how you conduct your practice. Over the course of this next year, I would like to discuss issues in medicine in light of those responsibilities. I hope you will consider these ideas and reflect on your own practice and how they are part of how you conduct your practice.

Two of the responsibilities are intertwined: Commitment to professional competence and a commitment to professional responsibilities.

As medical professionals, we must commit ourselves always to lifelong learning and the pursuit of not only new information but new ways of delivering care. Much of medicine will be provided in “teams,” and we must be open to the members of that team and see to it that the team members are competent and capable. We must not only be open to report concerns about team members, we must be open to concerns raised about our decisions and willing to learn from those concerns. Physicians need to be leaders of that team. Good leaders know the strengths of their team members and how to use their skills in the most appropriate way to achieve the best patient outcomes possible. This may not come naturally for some, which is why we must always be willing to learn and take that information from many sources.

As medical professionals, we are also expected to work collaboratively with each other and other members of the care team for our patients. We must be respectful of each other. We must be willing to participate in self-regulation. We must be willing to discipline ourselves and others and do so from a willingness to learn or teach. This should never be undertaken from a position of blame but from a position of improvement.

We work in a very complex profession. Issues will come up. Many of the challenges we face are related to the complex environment we find ourselves practicing in and variety of the needs of our patients. How we deal with them will determine whether we meet the “social contract” we have with our communities and our patients. I am confident that the physicians of South Dakota are ready for that challenge.

The new SDSMA Center for Physician Resources will be a leader in providing that information to the physicians of South Dakota. Stay tuned.

Book recommendations for July include three books by the same author, Mary Roach:

- Packing for Mars: The Curious Science of Life in the Void
- Stiff: The Curious Lives of Human Cadavers
- Gulp: Adventures on the Alimentary Canal

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Serving as South Dakota State Medical Association Alliance president last year, I was fortunate to have a talented, hard-working board. One of those board members was Connie Schroeder from Miller. This year Connie and I will be sharing the role as co-presidents. I look forward to welcoming Connie and working together as a team for the 2013-2014 year.

Thank you for the warm welcome, Mary Lou. As I begin my new role as co-president with you, I am honored to join a long line of dedicated and talented past presidents, many of whom I count as friends. I enjoyed serving on the board many years ago as secretary, and was excited at this chance to become active again at the state level.

My mother must have been feeling particularly elegant when I was born because she named me Constance Louise, in hopes that I would be called Connie Lou. The name didn't stick, but she is excited that her "Connie Lou" is joining together with Mary Lou in this leadership role.

I am a native South Dakotan, born in Faulkton, and lived in Wecota and Timber Lake, yet consider Miller my hometown after moving here during my junior high years. I have a B.S. in elementary education from the University of South Dakota and taught fifth and sixth grades in Irene and also Delano, Minnesota, during my husband's medical school and residency training. My husband, Dr. Steve Schroeder, also a Miller native, is a family physician in Miller and medical director for the South Dakota Foundation for Medical Care. We have four children: Paul, who is married to Danielle, a doctoral candidate for the new South Dakota State University nursing practices degree, lives in Sioux Falls where he is a systems analyst with Avera Health. Erica, an attorney with a large firm in Kansas City, is married to Eric, a Honeywell engineer. After graduating with a history degree a couple of years ago, Tom is returning to school to "beef up" his resume with another degree in a computer field. Our youngest, Meredith, graduated this spring from the University of Kansas and will be moving on to graduate school to fulfill her dream of becoming an art therapist.

I have always enjoyed the Alliance, known as the Medical Auxiliary when I first came on the scene. I enjoyed serving as president of District 5 and as secretary of the state board years ago. Mary Lou and I both feel that our diverse experiences will serve us well in the president's position. She is from a large South Dakota city; I am from a small town. She hails from West River; I come from East River farm country. Cell phones, email and messaging keep us connected, and we will be using these methods to stay connected with every district. One of my functions will be to serve as the main contact for each district president or contact person.

Helping us build that connection will be the job of our 2013-2014 SDSMA Alliance board of directors: Debbie Curd of Sioux Falls and Peggy Huber of Pierre, co-secretaries; Sally Kelts of Rapid City, treasurer; Stephanie Lehmann and Cathie Calhoun, both of Rapid City, health promotions; Katherine Looby of Sioux Falls, membership; Kristina Zimmerman of Rapid City and Suzanne Wiedel of Huron, legislation; Patti Herlhy of Rapid City, by-laws and parliamentarian; Claire Reilly Allen of Rapid City, newsletter; Marlys Porter of Sioux Falls, archives; Rob Keisacker of Sioux Falls, Alliance medical student spouse advisor; and Grace Wellman of Sioux Falls, Alliance Medical Student Scholarship Fund. Thank you to you all.

Feeling connected is so important in the wide open spaces that make up South Dakota! This important connection could not be accomplished without our district presidents and representatives: District 1 – Marie Hovland, Aberdeen; District 2 – Jeanne Flaherty, Watertown; District 3 – Joanie Holm, Brookings; District 4 – Peggy Huber, Pierre; District 5 – Suzanne Wiedel, Huron; District 6 – Sonja Vanerdewyck, Mitchell; District 7 – Katherine Looby, Sioux Falls; District 8 – Beth Pietila, Yankton; District 9 – Angie Dietrich, Rapid City; District 10 – Kay Berg, Winner; District 12 – Mary Bjordahl, Milbank. We would welcome a volunteer to be our contact with District 11, which covers the northwest part of the state, including Mobridge. Officers may be the connecting tissue, but the districts and their members are the real lifeblood of the Alliance. The contacts you have with one another – even one activity a year – are what unite our organization. Thank you for serving.

If you know me at all, you know that I am fascinated by history. I love the search for information and the satisfaction that comes when some obscure fact is located and confirmed. Our SDSMA Alliance bills itself as "the oldest continuous medical alliance in the United States." Do you know who our first president was? Do you know when she served? Do a little detective work and I know you will come to share my appreciation for those first women "Auxiliary" leaders.
BOLD MOVES start HERE.

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W hy aren’t all reproductive age females up-to-date on their immunizations? Data clearly demonstrates that immunizations protect the pregnant mother, fetus and the young infant from vaccine-preventable diseases. We know that pregnant women, the fetus and newborns have a high morbidity and mortality if infected with vaccine-preventable diseases. It only makes sense to strive for universal vaccination of reproductive age adults as well as the caregivers and family members of the children of our state.

One vaccine-preventable disease making a comeback and will be used as an example of the importance of vaccination is pertussis, AKA, “The Whooping Cough.” In 2010, there were 27,500 cases of pertussis reported in the U.S. and 29 reported cases in South Dakota. Between 2000 and 2011, there were 647 cases of pertussis reported in South Dakota. The vaccine was first used in the U.S. in the 1940s, with only one year since with no pertussis reported in South Dakota. In those affected with pertussis, pediatric patients younger than 1 year, especially those under 6 months, are the most likely to have serious complications. It is estimated that if children under 1 year contract pertussis, 50 percent will need to be hospitalized, 20 percent will get pneumonia and 1 percent will die. Sadly, one common method of transmission to a newborn is from a parent or caregiver.

How do we protect our most vulnerable population, the infant under 1 year of age? VACCINATION! However, infants do not start their immunization series against diphtheria, tetanus and pertussis until 2 months of age, so it is vitally important that parents, family members and caregivers are up-to-date on their vaccinations. Recommendations for pertussis vaccination during pregnancy are an evolving process and the best techniques/recommendations change over time with new data. In the best scenario, the parents make sure their Tdap is up-to-date prior to pregnancy and follow the CDC’s Advisory Committee on Immunization Practices (ACIP) recommendations during pregnancy.

The ACIP has been reevaluating the recommendations for Tdap administration during pregnancy in view of the increasing incidence of pertussis infections, attempting to minimize the effects of pertussis infection in young children, the current safety data on Tdap and changing information on immunogenicity of the vaccine. In 2013, ACIP released new recommendations that all pregnant women, irrespective of prior immunization history, should receive the Tdap vaccine during pregnancy preferably between 27 and 36 weeks gestational age. This regimen allows for adequate time before delivery to maximize antibody levels and optimize passive antibody transfer to the fetus. Tdap can safely be given at any time during pregnancy if the need arrives, like for wound care. If the patient does not receive the vaccine during pregnancy, she should still be vaccinated in the postpartum period. Protective antibody titers are usually achieved two weeks after receiving the vaccine.

There are reasons to give Tdap at different times during pregnancy. During an epidemic of pertussis or with a potentially contaminated wound, pregnant women should be managed similarly to any patient and vaccinated as soon as possible, irrespective of their gestational age. If a pregnant patient receives Tdap prior to the optimal 27 to 36 weeks gestational age, she should not be re-vaccinated later in that pregnancy.

In a pregnant woman due for a booster of Td, one should give Tdap booster during the pregnancy, preferably between 27 and 36 weeks. A woman who has never been vaccinated against tetanus needs to receive the 3-dose vaccination series (at 0 and 4 weeks and 6-12 months). One of the doses of this series should be Tdap and this dose should preferably be given between 27 and 36 weeks gestation.

Other factors which can play a role in protecting a young infant from pertussis include breast feeding (with passive antibody transfer) and cocooning. Cocooning was defined by ACIP as giving Tdap to “all women in the immediate postpartum period and all other family members and caregivers who had not previously received the vaccine in order to provide a protective cocoon of immunity around the newborn.” This was modified to now include giving Tdap to the pregnant woman between 27 and 36 weeks. It is critically important that all health care workers who
come in contact with pregnant women, newborns and young infants have their vaccines up-to-date.  

As stated earlier, infection of a pregnant woman or infant with a vaccine-preventable disease significantly increases the risk of morbidity and mortality. Pertussis was used as an example of a vaccine-preventable disease that can cause severe complications in a newborn that requires aggressive immunization to reduce the frequency in the U.S. New data continues to demonstrate the efficacy and safety of administering inactivated viral or bacterial vaccines during pregnancy. There is no evidence of a link to autism or other long-term fetal/neonatal complications. Live-attenuated vaccines like the measles-mumpsrubella, varicella and live-attenuated influenza should not be given during pregnancy due to a theoretical risk to the fetus. As health care providers, we can strive to achieve universal vaccination of reproductive-age women and men, indicated by immunizations of pregnant women and vaccinations of caregivers and family members who will be around the newborn. Stay tuned as these recommendations change with emerging data from ongoing clinical trials. For updated information, refer to ACIP’s recommendations at www.cdc.gov/vaccines/pubs/ACIP-list.htm.

REFERENCES


Case Report of Papillary Breast Carcinoma, Cystic

By Susan Anderson, MD, FAAFP, and Thomas Cink, MD

Abstract

Background – Intracystic papillary carcinoma of the breast (ICP) is a rare form of noninvasive breast cancer. The average age of onset is 65 years. Patients with ICP have a greater than 15-year survival rate advantage compared to patients with other breast carcinomas. There have been no reports of disease-related deaths in patients with ICP and no increased risk of disease in the contralateral breast. No definitive conclusions have been made regarding adjuvant treatment; however, ICP should generally be treated like ductal carcinoma in situ (DCIS). Tamoxifen is often recommended.

Introduction

Papillary carcinoma of the breast is generally a benign acting breast cancer presenting after menopause. We report the case of a postmenopausal woman presenting with a large cystic tumor measuring 12.3 x 12.0 x 5 cm in size. A brief review of the literature is included.

Case Report

A 63-year-old white woman presented as a new patient to establish care. She had had a primary care physician during her child bearing years, but had not had regular medical care in about 15 years. She reported generally feeling well with no chronic health problems. She worked in a nursing home for 21 years, working up to six days per week as a nursing assistant. She recalled getting struck in the chest and breast at some time over the previous year. She described her chest and left breast as edematous and ecchymotic at the time. She did not seek immediate medical care, choosing rather to just watch the breast for changes. Recently, her daughters noticed that her left breast appeared larger than the right through her clothes and brought this to her attention. She denied pain in the breast and attributed the enlargement to her previous injury. Her daughters urged her to seek medical attention. On presentation, the left breast was firm, approximately four times the size of the right, with the nipple displaced medially, and thinning of the skin on the inferior aspect of the breast. No open areas were noted though the skin was very taut. The patient did not seem to have tenderness on palpation. There were no masses or adenopathy noted in the left axilla. The right breast was unremarkable. The patient was referred immediately for diagnostic mammogram. Needle biopsy was performed and 776 milliliters of fluid was drained from the breast mass (see above). The patient was referred to surgery. The patient underwent simple mastectomy along with sentinel node biopsy. The pathology revealed papillary carcinoma, cystic. It was found to be estrogen and progesterone receptor positive. Three lymph nodes were negative for tumor. Due to the good prognosis of this borderline malignant tumor, no additional surgical procedures were recommended. Tamoxifen was recommended to reduce risk of future breast cancer.

Discussion

Intracystic papillary carcinoma (ICP) is a rare form of...
noninvasive breast cancer accounting for 0.5 to 1 percent of all breast cancers. In this disease process, a benign papillary lesion grows inside a cyst. Histologically, ICP tumors are characterized as well-circumscribed nodules surrounded by a fibrous capsule. Generally, ICP shows no invasive growth outside of the cyst and is treated similarly to ductal carcinoma in situ (DCIS). The average age of onset, about 65 years of age, is higher than that for the more common types of breast cancer. The frequency of lymph node metastasis associated with ICP is lower than that of common breast cancers, ranging from 0 to 36 percent. Therefore, it is reasonable to not perform axillary lymph node dissection. Sentinel biopsy is acceptable in patients with ICP. Patients with ICP have a greater than 15-year survival rate advantage compared to patients with other breast carcinomas. There have been no reports of disease-related deaths in patients with ICP, and, no increased risk of contralateral breast disease. No definitive conclusions have been made regarding adjuvant treatment, however, ICP should generally be treated like DCIS. DCIS and ICP are both noninvasive breast cancers with DCIS being the most common form of noninvasive breast cancer. DCIS is often treated with breast conserving methods, with lumpectomy and radiation therapy being shown to be successful for most patients. For women with extensive DCIS involving many ducts and quadrants of the breast, mastectomy may be necessary. Chemotherapy is not indicated due to the noninvasive nature of DCIS. However, for hormone receptor positive DCIS, tamoxifen, an antagonist of the estrogen receptor in breast tissue is often recommended to reduce future risk. Similar to DCIS, if a patient with ICP is found to be hormone receptor positive, tamoxifen is often recommended.

REFERENCES


About the Authors:
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Thomas Cink, MD, Clinical Professor, Department of Internal Medicine, Sanford School of Medicine of the University of South Dakota.
Neoplasms derived from chromaffin tissue are termed pheochromocytomas (PC) and paragangliomas (PG) with nomenclature differences based on location. PG are further broken down into functional and non-functional categories with regard to catecholamine production. The majority of chromaffin derived catecholamine producing neoplasms arise from the adrenal medulla and are termed PC. Functional extra-adrenal neoplasms are termed functional PG and comprise up to 10 to 20 percent of such catecholamine secreting neoplasms. Locating PG is often difficult and relies upon radiologic studies (computed tomography, magnetic resonance imaging and metaiodobenzylguanidine scintigraphy). Although the most common locations of PG include the Zuckerkandl body, urinary bladder sympathetic plexus, kidneys and heart, PG can be located from the skull base to the pelvis along the parasympathetic and sympathetic ganglion chains. The overall incidence of catecholamine producing tumors is rare, ranging from two to eight per 1 million people. Despite being rare, physicians often consider these lesions due to the unpredictable nature of catecholamine secretion, which can be lethal. This ultimately equates to a low threshold for testing.

Clinical presentations range from a neoplasm being seen incidentally on a radiologic exam to the classically described paroxysmal hypertensive episodes secondary to sudden catecholamine release. Additional findings described in the literature include Raynaud’s phenomenon, tremors, paresthesias, chest and/or abdominal pain, transient vision abnormalities, transient increases in body temperature and excessive sweating. Other considerations can be correlated with the physiologic effects of catecholamines (paroxysmal blood pressure increase with beta-blocker therapy, hyperglycemia without known diabetes, severe constipation with accompanying HTN).

Genetics
A variety of germline mutations/syndromes are associated with catecholamine secreting neoplasms. These include multiple endocrine neoplasia (MEN) types 2A (medullary thyroid carcinoma, pheochromocytoma and hyperparathyroidism) and 2B (medullary thyroid carcinoma, pheochromocytoma, hyperparathyroidism, mucosal neuromas and marfanoid habitus), both associated with germ line mutations in the RET proto-oncogene on chromosome 10Q11.2. Others include von Hippel Lindau disease (hemangioblastomas, cysts in liver, kidneys and pancreas, renal cell carcinomas and pheochromocytomas, associated with VHL tumor suppressor gene on chromosome 3p25-p26), Neurofibromatosis type 1 (linked to NFI gene on 17q11.2) and Carney’s triad (gastric leiomyosarcoma, pulmonary chondroma and extra-adrenal pheochromocytoma). Familial paraganglioma has also been identified and is inherited in an autosomal dominant fashion. This is a result of mutations in the succinate dehydrogenase gene (SDH) and mutations of the SDH B subunit (SDH B are associated with malignant tumors). Because PC/PG are rare and up to one-quarter have identified genetic mutations, targeted genetic testing is suggested for those with family histories or phenotypic signs of the above conditions. In those seemingly sporadic cases, some advocate testing the VHL and SDH genes.
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Malignant Potential
Classically, pheochromocytoma is associated with the “rule of 10:” 10 percent extra-adrenal, 10 percent bilateral, 10 percent without hypertension and 10 percent malignant. Since the recognition of germ line mutations this rule is modified as those with particular germ cell mutations (SDH B) have a higher incidence of malignancy. Unfortunately, determining malignant potential based on histology is generally unreliable as those with “benign” histologic features may behave in a malignant fashion and those malignant in appearance often act benign. Malignancy is therefore determined by the presence of metastases which may range from adjacent lymph nodes to distant sites of metastatic disease.¹

Catecholamine Synthesis and Breakdown
To understand biochemical testing recommendations, it is best to have an overall appreciation for catecholamine synthesis and metabolism. Catecholamine synthesis occurs within the sympathetic nervous tissue and consists of epinephrine and norepinephrine, the latter being in largest concentration.¹⁴ Catecholamine metabolism occurs via two pathways – intraneuronal and extraneuronal, with intraneuronal being the primary route. Sympathetic nervous tissue contains monoamine oxidase, which deaminates norepinephrine to 3,4-dihydroxyphenylglycol (DHPG).¹⁴ DHPG enters circulation and is metabolized via extraneuronal O-methyltransferase (COMT), metanephrine and normetanephrine (classically referred to as the “metanephrines”) are produced from O-methylation from epinephrine and norepinephrine respectively.¹⁴ The metanephrines are further conjugated to a sulfur group in gastrointestinal tissues; it is this sulfur conjugated derivative that predominates in urine specimens. It should be noted that COMT is also present in the adenal medulla and up to 90 percent of metanephrines and 40 percent of normetanephrine are of adrenal origin.¹⁴ The expression of COMT by PC and functional PG explains the utility in measuring metanephrines to detect these tumors.

Recommendations
Test selection is often confusing due to the wide number of available tests. The 2005 International Symposium on Pheochromocytoma yielded the following (summarized) recommendations on testing:

- The first initial test for pheochromocytoma should include plasma-free metanephrines or urinary fractionated metanephrines.
- Reference values should be set to optimize sensitivity. Specificity should be a secondary consideration.
- Algorithms should not rely on a test being “positive” or “negative” (binary approach), but should take advantage of the continuous nature of biochemical testing results.
- Interpretation of a positive test in the “grey area” requires consideration – and, where possible, elimination of causes of false-positive results before confirmatory testing is initiated.
- Imaging studies to search for a pheochromocytoma should usually only be initiated once biochemical or other evidence of the tumor is reasonably compelling.
- CT or MRI (anatomic imaging) provide the most appropriate tools for initial localization. Functionally imaging may be useful for tumors not located by anatomic imaging.

This information, along with further details expounding upon these recommendations, can be found at www.pressor.org/information.htm.

The first recommendation is easy to scrutinize, with most questioning which test is superior. Several sources site variable specificities and sensitivities regarding the two tests. Discrepancies may result from variations on the instrument used, the effects of seated posture, etc.¹⁴ The sensitivity of 24-hour urine testing yields 98 percent sensitivity and a 98 percent specificity where plasma-free metanephrines yields up to a 100 percent sensitivity but an 85 to 89 percent specificity.¹ One can utilize the more advantageous test by taking the pre-test probability of disease and the differing specificities/sensitivities into consideration.

Because up to 25 percent of those diagnosed with PC/PG have genetic abnormalities, those with syndromes related to pheochromocytoma (outlined above) have a much higher pre-test probability of disease. In this setting, a test with a higher sensitivity (plasma-free metanephrines) is more desirable in order to avoid false-negative results. Essentially, plasma-free metanephrines is best for confirming or excluding the presence of a catecholamine producing neoplasm.¹⁵ In contrast, those presenting with only hypertension or an “incidentaloma” have a 0.5 percent and 4 percent pre-test probability of disease, respectfully. If clinical suspicion is present in these settings and one wishes to screen for disease, the 24-hour urine test is superior as the specificity is much higher. Given the low pre-test probability of disease and lower specificity of the
plasma metanephrine test, a positive result would almost always be a false positive. For example, a “positive” result using a test with 89 percent specificity (specificity of plasma-free metanephrines) in a setting where the pre-test probability of disease is 2 percent (somewhere between the hypertensive and “incidentaloma” patient) yields a 16 percent chance of disease. This being said, 24-hour urine collection is often difficult to reliably obtain. A possible strategy to overcome 24-hour urine collection up front in those without genetic predisposition is to screen with plasma-free metanephrines and follow-up positive results with the 24-hour urine test. This approach exploits the advantages of each test.

When interpreting test results, it is important to understand various pharmaceutical agents can result in false positives. For example, tricyclic antidepressants and phenoxybenzamine can cause false positives for both plasma and urine testing where acetaminophen can cause a false positive in plasma testing. Other substances/pharmaceutical agents that can interfere with testing include amphetamines, appetite suppressants, caffeine, clonidine, dexamethasone, diuretics, epinephrine, alcohol, insulin methyl dopa, tetracycline, and others. We recommend a through review of all pharmaceutical agents a patient is taking prior to testing.

Summary
Testing for pheochromocytoma is not black and white. Remembering the best initial test is plasma-free metanephrines or urinary fractionated metanephrines is the first step. Taking specificity, sensitivity, pre-test probability of disease, ease of urine collection, co-morbid conditions and medication use into consideration can help assist in appropriate test selection.

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.

About the Authors:
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Extreme Multi-Level Anterior Cervical Discectomy and Fusion

By Jeremy P. Morgan, MS, and Wilson T. Asfora, MD, FRCSC, FAAN, FACS

Abstract

The use of anterior cervical discectomy and fusion (ACDF) is a common procedure used to treat those who suffer from degenerative disc disease (DDD) of the cervical spine which may result in spondylolisthesis, spinal stenosis, disc herniation, nerve root and/or cord compression. ACDF is regularly used for the fusion of one to four cervical spine levels; however, the literature documenting the fusion of 5 or 6 levels is surprisingly lacking. In this retrospective review of our case series, we document two 5-level and two 6-level ACDF in elderly patients using custom made titanium fusion plates and patellar allograft bone for interbody placement without posterior fixation. The documentation of these long anterior constructs without supplemental posterior fixation or the use of a halo vest apparatus, but a simple neck collar for three months, is an important contribution to the literature illustrating that with utilization of appropriate technique, a high number of levels can be safely fused in the elderly patients necessitating this particular procedure.

Introduction

Anterior cervical discectomy and fusion (ACDF) is a widely used procedure to alleviate the symptoms of degenerative disk disease (DDD). Numerous publications have assessed the safety and efficacy of ACDF of anywhere between 1 and 4 levels. The documented literature of the 5- and 6-level anterior cervical discectomy, however, is extremely limited. For this group of patients with severe cervical spondylolisthesis involving the entire cervical spine, most surgeons prefer to perform a simple laminectomy; however, this procedure does not address the cord compression from anterior spurs or the instability issues and frequently results in persistent neck pain and deformity. Frequently, a multilevel anterior decompression is supplemented by posterior fusion even if only three or four levels are addressed. The reporting of these cases indicates that with proper surgical practice and technique, extreme multi-level ACDF procedures without supplemental posterior fixation or halo vest immobilization can be performed with successful outcomes for the patient.

In our review, only three 5-level procedures were found to have been reported.1,2 Chu et al.1 reported one 5-level procedure without plate fixation and using only titanium interbody cages to achieve fusion. Koller et al.2 reported two other cases where both utilized iliac crest bone graft and one was achieved by coupling two anterior plates. Three 6-level fusions have also been reported and those were performed utilizing corpectomies supplemented by posterior instrumentation.3-5 Here, we present a single surgeon’s experience with and subsequent successful fusion of separate 5-level and 6-level ACDF procedures of the cervical spine without posterior fixation. Both procedure types were performed using three custom made anterior cervical fusion plates from Synthes (West Chester, Pennsylvania) and one prefabricated plate from LifeSpine (Hoffman Estates, Illinois). Patients who have remotely undergone anterior cervical fusions and subsequently returned for additional levels were excluded from this report. Patients who had undergone corpectomies, with or without posterior fusion, were also excluded.

Case Report 1

In February 2004, a 70-year-old male presented to the clinic with a long history of severe neck pain without radiation, associated with tingling of the forearm and third, fourth and fifth fingers bilaterally. Upon evaluation, the patient demonstrated a decreased appreciation of light touch and pinprick over the medial aspect of both forearms and third, fourth and fifth fingers of both hands, loss of deep
Reportable Diseases – South Dakota 2013

**Category I diseases:** Report immediately on suspicion of disease

**Category II diseases:** Report within 3 days

* Send isolate to SD Public Health Laboratory

### Anthrax (Bacillus anthracis*)

- Anaplasmosis (Anaplasma phagocytophilum)
- Arboviral encephalitis, meningitis and infection (West Nile, St. Louis, Eastern equine, Western equine, California, Japanese, Powassan, LaCrosse)
- Babesiosis (Babesia spp)
- Botulism (Clostridium botulinum)
- Brucellosis (Brucella species *), Campylobacteriosis (Campylobacter species)
- Chicken pox/Varicella (Varicella-zoster virus)
- Chlamydia infections (Chlamydia trachomatis)
- Cholera (Vibrio cholerae)
- Cryptosporidiosis (Cryptosporidium parvum)
- Cyclosporiasis (Cyclospora cayetanensis)
- Dengue viral infection (Flaviviridae)
- Diphtheria (Corynebacterium diphtheriae*)

**Drug resistant organisms:**
- Carbapenem-resistant Enterobacteriaceae (CRE)
- Methicillin-resistant Staphylococcus aureus (MRSA), invasive
- Vancomycin–intermediate (VISA) and –resistant (VRSA) Staphylococcus aureus

**E. coli, shiga toxin-producing (Escherichia coli**), includes E. coli O157:H7, O26, O111, O103 and others.

**Ehrlichiosis (Ehrlichia species)**

**Influenza, novel strains**

**Influenza:** including hospitalizations, deaths, lab confirmed cases (culture, DFA, PCR), weekly aggregate totals of rapid antigen positive (A and B) and total tested

**Gliadinsis (Gladiola lamiata / arteschnafis**)

**Gonorhoea** (Neisseria gonorrhoeae)

**Haemophilus influenzae type b**, invasive

**Hantavirus pulmonary syndrome** (Hantavirus)

**Hemolytic uremic syndrome**

**Hepatitis, viral, acute A, B and C; chronic B and C; and perinatal B**

**Human immunodeficiency virus (HIV) infection, also including:**
- Stage III, Acquired immunodeficiency syndrome (AIDS)
- CD4 counts in HIV infected persons,
- HIV viral loads, and
- Pregnancy in HIV infected females

**Legionellosis (Legionella species)**

**Leptospirosis (Leptospira interrogans)**

**Listeriosis** (Listeria monocytogenes)*

**Lyme disease** (Borrelia burgdorferi)

**Malaria** (Plasmodium species)

**Meningococcal disease, invasive (Neisseria meningitidis)*

**Mumps** (Paramyxoviridae)

**Pertussis** (Whooping cough) (Bordetella pertussis)

**Plague** (Yersinia pestis)*

**Poliomyelitis, paralytic and nonparalytic** (Poliovirus)

**Psittacosis** (Chlamydophila psittaci)

**Q fever** (Coxiella burnetti)

**Rocky Mountain spotted fever** (Rickettsia rickettsii)

**Syphilis** (Treponema pallidum) including primary, secondary, latent, early latent, late latent, neurosyphilis, late non-neurological, stillbirth, and congenital

**Tetanus** (Clostridium tetani)

**Toxic shock syndrome** (Streptococcus and non-Streptococcus)

**Transmissible spongiform encephalopathies, such as Creutzfeldt-Jakob disease**

**Trichinellosis** (Trichinella spiralis)

**Tuberculosis, active disease** (Mycobacterium tuberculosis* or Mycobacterium bovis*);

**Tuberculosis, latent infection** (in certain high risk persons: foreign-born <2 yrs in US, close contacts, diabetics, renal dialysis, children <3 yrs. and certain medical conditions)

**Typhoid** (Salmonella typhi)*

**Vaccine Adverse Events**

**Viral Hemorrhagic Fevers** (Filoviruses, Arenaviruses)

**Yellow fever** (Flavivirus)

**Outbreaks of:**
- Acute upper respiratory illness
- Diarrheal disease
- Foodborne disease
- Healthcare-associated infections
- Infections in child care facilities
- Rash illness
- Waterborne disease

**Symptoms suggestive of bioterrorism and other public health threats**

**Unexplained illnesses or deaths in human or animal**

The South Dakota Department of Health is authorized by SDCL 34-22-12 and ARSD 44:20 to collect and process mandatory reports of communicable diseases by physicians, hospitals, laboratories, and other institutions.

**How to report:**
- Secure website: sd.gov/diseasereport
- Telephone: 605-773-3737 or 800-592-1861 for communicable disease staff person during business hours, or 800-592-1804 confidential answering device
- After hours emergency Category I diseases, call 605-773-3737 or 800-592-1861
- Fax: 605-773-5509
- Mail or courier to: Infectious Disease Surveillance, Department of Health, 615 East 4th Street, Pierre, SD 57501; marked "Confidential Disease Report"

**What to report:** Reports must include as much of the following as known:
- Disease or condition
- Date of disease onset
- Relevant lab results & specimen collect date
- Name and phone number of person making report

**CANCER (SDCL 1-43-14) Report to SD Cancer Registry, call 800-738-2301**

**South Dakota**

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tendon reflexes throughout the upper extremities, and limited range of motion of the cervical spine. MRIs and X-rays (Figure 1) of the cervical spine showed subluxation from C3 to T1 associated at the C5-6 level with marked cord compression and signal changes of the cord. Results were reviewed and options discussed with the patient. In light of failure of extensive conservative measures, the patient verbalized interest in undergoing a 5-level cervical fusion procedure; however, due to other various health and socioeconomic factors the patient chose to postpone the proposed surgery for three years. In the interim period an EMG and nerve conduction study were consistent with a carpal tunnel syndrome on the left, which was surgically addressed, as well as a chronic polyradiculopathy and peripheral neuropathy. In May 2007, the patient called the clinic about his neck pain; however, at this time there was radiation down both upper limbs extending to the hands and bilateral shoulder pain. An updated MRI revealed progression of the cervical spondylosis with multiple level cord and nerve root compression from C2 to T1. From this MRI calculations were made for a custom plate to be fashioned. The C2-3 level was not included as the disease was less severe, so the plate extended from C3 to T1.

In August 2007, the patient underwent a 5-level ACDF from C3 to T1. The procedure was uneventful. Of note, intubation was done transnasally to allow for intraoperative elevation of the mandible. Following discectomy at each level, measurements were taken from the disk space and patella allografts were fashioned with excellent fit. The prefabricated custom made, titanium plate of 125 mm was then applied to the spine and secured to the spine by means of 12 locking 16 mm screws. Bilateral screws were placed into the vertebral body of C3, C4, C5, C6, C7 and T1, respectively. A Jackson-Pratt drain was inserted and brought out through a separate incision. Following an uneventful hospital course, the patient was discharged home with a Philadelphia collar.

Post-operative visits in September and November 2007 indicated that the patient was doing well and that the plate and screws remained in good position. The patient’s only complaint in September was of mild difficulty swallowing; however, this was resolved by the November visit. In November 2009, the patient was seen in the neurology clinic with complaints of increasing numbness, weakness and tingling in all extremities, and no complaint of pain. Follow-up cervical X-rays (Figure 2) and MRI showed

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**Figure 1.** Presurgical cervical flexion (A), extension (B) and MR (C) images of Case 1 indicating severe cervical spondylosis with multi-level spondylolisthesis and cord compression from C3-T1.

**Figure 2.** Lateral (left) and AP (right) X-rays taken three months after C3-T1 5-level ACDF in Case 1.
Figure 3. Presurgical cervical X-ray extension (A), flexion (B), anteroposterior (C) and MR (D) images of Case 2 indicating multi-level DDD, grade 1 spondylolisthesis at C7-T1 and multi-level disc protrusions with multiple levels of nerve root and cord compression.

Figure 4. Three-month post-operative lateral (A) and AP (B) view X-rays with a 14-month post-operative sagittal CT (C) indicating proper hardware position and fusion from C3-T1 in Case 2.

Figure 5. Presurgical cervical X-ray extension (A), flexion (B), anteroposterior (C) and MR (D) images of Case 3 indicating severe cervical spondylosis with multiple level spondylolisthesis and posterior projecting spurs associated with cord compression from C2 to T1.
adequate decompression of cord and nerve roots with the suggestion of solid fusion from C3 to T1. The patient underwent an EMG and nerve conduction studies which showed the presence of a peripheral neuropathy, and it was deemed that the patient’s present complaints were likely a result of his peripheral neuropathy and possibly residual myelopathy, and not related to the extreme multi-level surgery.

Case Report 2
A 71-year-old woman presented in February 2010 with the immediate onset of severe neck pain following a fall while exiting from her car approximately one month prior to being evaluated. Her pain symptoms fluctuated, but overall she rated her posterior neck pain as 8 on a scale of 1 to 10 with the pain radiating in both upper arms associated with tingling and numbness in both upper limbs. The following diagnostic procedures were performed in order to assess the extent of the patients injuries: cervical spine X-rays performed the day of the fall, cervical spine computed tomography (CT) scan two weeks after the fall, cervical spine X-rays two months after the fall (Figure 3, A-C), cervical spine CT scan 10 weeks after the fall, and finally, cervical (Figure 3, D), thoracic and lumbar myelography 10 weeks after the fall. These investigations revealed severe degenerative disc and facet changes at all cervical levels with grade 1 spondylolisthesis at C3-4, C5-6 and C7-T1 of 2-3 mm. There was mild to moderate ventral extradural impressions present from C3-C7 associated with mild cord compression and multiple neuroforamen narrowing.

One year after the patient’s fall and 11 months after the initial clinic visit, ACDF was performed from C3-T1 with allograft patellar bone and a custom made Synthes plate following standard protocol. The plate was 75 mm long and secured to the spine by 12 locking 16 mm screws. All post-operative X-rays indicated that the hardware was in good position and there were no radiographic features to indicate complications. Evaluation was done three months after the procedure and X-rays (Figure 4, A-C) indicated interbody fusion extending from C3-T1 vertebrae. An MRI (Figure 4, D) performed 14 months after the procedure was satisfactory showing good fusion and no residual cord or nerve root compression.

Case Report 3
The third patient was a 70-year-old female with chronic back and neck pain with debilitating headaches. Prior to presenting in the clinic, the patient had seen multiple orthopedic and spine specialists for her back and neck pain. She had received conservative treatments with moderate success for her pain over the previous three years, including physical therapy and multiple C5-6 epidural injections of Depo-Medrol. Cervical spine X-rays and MRIs (Figure 5, A-D) were similar to those taken two-and-a-half years previous, revealing degenerative changes from C2-T1 associated with grade 1 spondylolisthesis at multiple levels, bilateral uncovertebral joint degeneration, and facet arthropathy, as well as mild spinal canal stenosis due to spondylisis, and multiple posterior projecting spurs indenting the dural sac. Based upon these diagnostic findings, it was recommended and the patient agreed to undergo a 6-level anterior cervical fusion from C2 to T1 using a custom made Synthes plate. The surgical procedure was conducted similar to that reported for Case Report 1 with the addition of the C2-3 level. Patella allograft was again used for bone grafting. The custom Synthes plate measured 110 mm in length and was secured to the spine by means of 14 locking 16 mm screws. The patient tolerated the procedure well and was sent to the recovery room in excellent condition. Post-surgical lateral view cervical spine X-rays indicated the hardware to be in good position. On post-op day one, the patient exhibited mild hoarseness and swallowing difficulties; however, by day three the symptoms had improved and the patient was ambulating with no assistive devices and was discharged with an Aspen Vista cervical collar. Upon her one-month and three-month follow-up appointments, the patient stated that her neck and bilateral shoulder pain had completely subsided, yet she still suffered from occipital headaches. At both appointments the patient presented with tenderness of both occipital nerves. Lateral and anteroposterior (AP) view X-rays (Figure 6) of the cervical spine taken at both follow-up appointments continued to indicate stable position and alignment of the hardware as well as proper positioning of the bone grafts. In order to alleviate the patient’s occipital headaches, the patient underwent occipital nerve blocks with the injection of bupivacaine and methylprednisolone into her greater and lesser occipital regions. At the time of this publication, the patient is two years out from ACDF and continues to do well. Follow-up X-rays show solid fusion from C2 to T1.

Case Report 4
This patient first presented to her OB/GYN during her annual exam in November 2010 as an 80-year-old female complaining of a stiff neck on a daily basis with no relief from ibuprofen. In February 2011, the patient had AP and lateral X-rays (Figure 7, A-C), as well as a cervical MRI (Figure 7, D) revealing DDD throughout the cervical spine resulting in mild-to-moderate cervical kyphosis, disc space narrowing at multiple levels, as well as grade 1 spondylolisthesis at the C2-3 and C7-T1 level. The patient elected to undergo conservative treatments including epidural injection of steroids at the C6-7 level in February and April.
2011, as well as participated in physical therapy during April and May 2011. In April 2012, the patient presented to the clinic with chronic bilateral neck pain and muscle spasms with markedly decreased range of motion and tenderness over the paraspinal and trapezius muscle. At this point, she was given a prescription for a muscle relaxant and a home traction device due to the cervical paraspinal muscle spasm. The patient was advised to exhaust all conservative measures before undergoing multi-level fusion. In May of 2012, the patient had a trigger point injection and was found to have hypotension with elevated troponin and subtle EKG changes. After cardiac workup and clearance, in view of the severity of her ongoing pain, it was recommended that the patient undergo a 5-level (C3 to T1) cervical discectomy and fusion. The patient underwent ACDF, as per protocol, without intraoperative or immediate postoperative complications. At the time of surgery, however, it was felt that a 6-level (C2-T1) and not a 5-level would be more appropriate for the patient. Therefore, as a custom made 6-level plate was not available, a prefabricated 5-level LifeSpine Neo-SL 100 mm cervical plate was chosen and secured to the spine by 12 locking 16 mm variable angle bone screws. For this reason, the screws were not placed into the C3 vertebral body, but into C2 being partially through the disc space at the C2-3 level and into the vertebral body of C4, C5, C6, C7 and T1. Post-operative X-rays (Figure 8) indicated the hardware to be in adequate position and the patient was discharged in good condition wearing a Philadelphia collar.

Discussion

There are important technical nuances which will make a 5- or 6-level ACDF successful. To begin with, anesthesia needs to be through trans-nasal intubation, thus allowing elevation of the mandible to facilitate exposure of the C2-3 and C3-4 levels. If the surgeon feels that a transverse incision along a skin crease may not provide them with adequate exposure, they should then proceed with a vertical incision along the anterior border of the sternocleidomastoid muscle. Sharp dissection should be performed for exposure of all levels with care not to injure the hypoglossal, the superior laryngeal, recurrent laryngeal and vagal nerves. The latter is in the carotid sheath, usually between the carotid artery and jugular vein, and should not be disturbed. The submandibular salivary gland may have to be dissected and elevated for better exposure of the C2-3 or C3-4 area. Care should be taken to prevent esophageal tears. Following exposure of all levels, apply retractor of choice.

Start the discectomy at the lowest or the highest level (whichever is the most difficult to expose), following which the retractors are then sequentially moved from level to level. Brain retractors are used to protect the soft tissues of the neck. These are placed between the retractor plate and distractor bar. Following the discectomy with adequate decompression of the dural sac and exiting nerve roots, the endplates should be prepared to receive the graft. If extensive removal of the cortical bone is performed, the graft will settle which may lead to increased stress and strain on the hardware, which may then lead to eventual breakage of the plate or screw. On the other hand, if the endplate is left entirely intact, the graft may fail to fuse; therefore, the endplate should have a combination of bleeding cancellous bone and strong cortical bone. Measurements are taken from the disc space which includes width, height and depth, and a bone graft is fashioned to maximize the fusion surface. Likewise, the bone graft used should have strong cortical edges and center cancellous bone. Allograft patellar bone is the bone of choice as it meets this criterion with very strong cortical margins and cancellous center. The size of the plate requested, previously manufactured, is of utmost importance. If distraction caused by the multiple grafts has occurred, the plate may be too small; therefore, when calculating the size of the plate to be customized, based on preoperative MRI, one should take this factor into consideration. It is very important for the stability of the construct that two screws be placed into each vertebral body and that these screws be all bicortical or near-bicortical. In these four cases, 16 mm screws were used. For safety when choosing the length of the screw, place the screw into the disc space and select the
longest available that will fit within the vertebral body without extending beyond the posterior longitudinal ligament. Even in cases of severe spinal canal stenosis which extends beyond the level of the disc space, a total corpectomy may be avoided with adequate decompression of the dural sac by undermining the vertebral body from above and below, leaving a substantial bridge of bone which will accommodate the bone grafts and the two plate screws. Following all procedures, in view of the extensive dissection, a Jackson-Pratt or similar drain should be placed over the pre-vertebral area and taken out through a separate stab wound.

Advanced age poses a special challenge in view of the potential for a myriad of medical complications. In addition to complications inherent to the surgical procedure, other potential risks related to advanced age include poor bone density, slow healing, increased risk of infection, excessive postoperative coughing which could lead to bleeding, especially if the patient had been on antiplatelet agents, and construct failure. On the other hand, advanced age is more frequently associated with a less mobile spine, which contributes to the stability of the construct. The series reported herein suggests that even the extreme multilevel anterior approach is well tolerated by the elderly patient as opposed to a posterior procedure, which is usually associated.

Figure 7. Presurgical cervical X-ray extension (A), flexion (B), and MR (C) images of Case 4 indicating severe cervical spondylosis with cervical kyphosis, multiple level spondylolisthesis and posterior projecting osteophytes associated with spinal canal stenosis.

Figure 8. Sagittal (A) and posterior (B) X-rays taken one month and a sagittal MR image (C) taken two months after C2-T1 6-level ACDF.
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with much higher postoperative pain and mortality.

The decision to proceed with an extreme multi-level (5- or 6-level) ACDF is not taken lightly. When there is significant disc disease and this fails to respond to exhaustive conservative measures, especially when associated with cord compression, myelopathy, abnormal flexion-extension views, or nerve root compression along with corresponding radiculopathy, all levels need to be addressed, otherwise patients continue to experience symptoms such as pain, radiculopathy and/or myelopathy. If the level has mild disease not associated with cord or nerve root compression, facet joint pain, and not unstable, the level may be left alone. Diagnostic facet joint blocks may be used to select symptomatic levels. Another issue, still somewhat controversial, is that a level with significant disease, which if not addressed, may progress more rapidly if the level above or below are fused.6-8 The high number of patients who have remotely undergone previous fusion and then returned for additional symptomatic levels were excluded from this report, as the objective herein is to demonstrate that the extreme multi-level, 5- and 6-level, ACDF can be safely performed as a single procedure with good outcomes and without an additional posterior cervical fusion or halo vest immobilization.

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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A new option for the treatment of type 2 diabetes was approved this year. Canagliflozin (Invokana) has a mechanism of action that is different from current therapies; it is a sodium-glucose co-transporter 2 inhibitor. Sodium-glucose co-transporter 2 inhibitors increase urinary glucose excretion by reducing the reabsorption of filtered glucose and lowering the renal threshold for glucose. Through this mechanism it decreases plasma glucose, which causes both a mild osmotic diuresis and increased caloric loss.1,2

The effectiveness of canagliflozin was assessed by monitoring fasting blood glucose and HgbA1c levels. In a study by Stenlöf et al., canagliflozin was compared to placebo.1 After 26 weeks of treatment, the results showed that the HgbA1c was decreased from baseline by 0.77 percent with the 100 mg dose and 1.03 percent with the 300 mg dose, compared to an increase of 0.14 percent with the placebo. Fasting blood glucose levels were reduced by 36 mg/dl and 43.2 mg/dl in the 100 mg and 300 mg dose respectively. Two hour postprandial glucose levels were decreased by 48.6 mg/dl with the 100 mg dose and 64.8 mg/dl with the 300 mg dose. All of these results were significant and had p values less than 0.001. Rosenstock et al. assessed the efficacy of canagliflozin when it was added to metformin therapy.2 After 12 weeks of treatment, the HgbA1c levels were decreased by 0.76 percent and 0.92 percent with the 100 mg and 300 mg doses. This was significant when compared to placebo. The fasting blood glucose levels were decreased by 16 to 27 mg/dL.

In addition to canagliflozin’s effect in reducing blood glucose levels, it also has several other benefits. Studies have shown it to decrease body weight and systolic blood pressure and to increase HDL cholesterol. When canagliflozin was taken as monotherapy, the body weight was decreased by 2.2 percent and 3.3 percent in the 100 mg and 300 mg dose when compared to placebo.1 Systolic and diastolic blood pressure was decreased by 3.7/1.6 mmHg with the 100 mg dose and 5.4/2.0 mmHg with the 300 mg dose. Statistically significant increases in HDL cholesterol were also seen in both treatment groups. The HDL increased by 6.8 percent and 6.1 percent in the 100 mg and 300 mg doses. Body weight reductions were also observed in the metformin and canagliflozin trial. In the treatment group, weight decrease from baseline was 2.3 to 3.4 percent.7 The weight loss was progressive during the study and had not reached a plateau by the end of the 12 weeks.

Along with concerns about weight and hypertension, diabetic patients also carry a higher risk for developing renal dysfunction. Diabetic treatment options for patients with impaired renal function are limited. While canagliflozin is only approved currently for patients with an eGFR above 45 ml/min, a recent 26-week study looked at the use of this medication in patients with type 2 diabetes and an eGFR of 30-50 ml/min.3 Most of the patients in this study took canagliflozin in addition to other standard diabetes medications. The level of impact on measured outcomes was lower than that seen in patients with higher renal function, as the effectiveness depends on the urinary excretion of glucose. However, results still showed improvement in some areas compared to placebo. HgbA1C was significantly reduced by 0.33 percent and 0.44 percent with the 100 mg and 300 mg doses, compared to a 0.03 percent reduction with placebo. Reported p values were less than 0.05 and less than 0.001, respectively. Weight decreased in the canagliflozin groups by 1.2 percent and 1.5 percent, while the placebo group showed a weight gain of 0.3 percent. Canagliflozin also showed decreases in blood pressure for these patients, with changes of -5.8/0.8 and -6.1/1.1 mmHg beyond changes seen with placebo for the 100 mg and 300 mg doses. Adverse effects data did not show any drastically different information from previous studies in patients with higher renal function.

The most common adverse effects that were higher in the canagliflozin population as compared to placebo include genital mycotic infections and urinary tract infections. The rate of female and male mycotic infections was 7.2 to 8.2 percent and 3.1 to 3.6 percent higher than placebo. The incidence of urinary tract infections was only slightly higher with canagliflozin. Increased urination, increased thirst and constipation were reported in greater than or equal to 2 percent of the treatment population. Adverse events related to osmotic diuresis (polyuria and pollakiuria) and...
hypovolemia (hypotension, orthostatic hypotension, syncope and dehydration) occurred more frequently in elderly patients, patients with decreased renal function, patients with hypotension and patients on diuretics and other antihypertensive medications. Hyperkalemia did occur in a small number of patients and the risk was reported mainly in patients who had contributing factors. This included impaired renal function and/or the use of other potassium-increasing agents such as ACE inhibitors. Studies also showed a potential change in renal function with an increased serum creatinine level in the early weeks of the studies. While most patients experienced only a small change in serum creatinine, the change was more pronounced in patients with reduced renal function at baseline. While trending towards baseline, the eGFR still remained decreased at the end of the 26-week study. In the monotherapy trial, the incidence of hypoglycemia was 3.6 percent, 3 percent and 2.6 percent with the 100 mg, 300 mg and placebo group. No severe episodes of hypoglycemia were reported. The incidence of hypoglycemia was higher when canagliflozin was administered with insulin or sulfonylureas. This effect appears to be due to the combination of a reduced plasma glucose level from canagliflozin, which was then reduced even more by the known hypoglycemic effects of the other agents. The effects of canagliflozin alone should not allow for blood glucose levels to drop to hypoglycemic levels. The prescriber should consider decreasing the dose of insulin or sulfonylurea agents if adding canagliflozin to one of these agents. The new mechanism of action of canagliflozin provides HgbA1c reduction that is similar to other antidiabetic drug classes and it has the added benefit of weight loss and decrease in blood pressure. Canagliflozin was effective as monotherapy or in combination with other antidiabetic medications and has a low incidence of hypoglycemia. The cost of canagliflozin for a month supply of either dose is around $315. Factors that will limit the use of canagliflozin include cost, patients prone to hypovolemia, hyperkalemia or mycotic infections and impaired renal function. Approved dosing for canagliflozin is 100 mg daily taken before the first meal of the day for patients with an eGFR greater than 45 ml/min. The dose can be increased to 300 mg daily if the eGFR is greater than 60 ml/min.

The approval of Invokana has given providers and patients a new option for the treatment of diabetes. The new drug class has promising results to help with glucose control, weight loss and blood pressure reduction. Further studies with a longer duration are needed to continue to evaluate the effectiveness and adverse effects from this medication and determine its place in the management of diabetes.

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Hope for the best...prepare for the worst?

For many types of insurance, the need to purchase coverage is pretty much a given. Life, health, disability, homeowners, and auto insurance all play an important role in protecting against the risk of financial calamity. However, when it comes to long-term care (LTC) insurance, whether or not to purchase it becomes less clear-cut.

By definition, LTC is care you need if you can no longer perform everyday tasks by yourself due to a chronic illness (including cognitive impairment caused by Alzheimer’s disease), injury, disability, or simply the aging process. You can receive LTC in your own home, a nursing home, or another long-term care facility, such as an assisted living facility.

As a member of the medical profession, you’re no doubt aware that anyone can need LTC at any time in their life. Automobile and sports accidents; disabling events such as strokes, brain tumors and spinal cord injuries or disabling diseases such as multiple sclerosis and Parkinson’s can happen to anyone at almost any age.

According to the U.S. Department of Health and Human Services, at least 70 percent of people over age 65 will require LTC services at some point in their lives. And contrary to what many people believe, Medicare and private health insurance programs do not pay for the majority of LTC services. So, LTC coverage must be purchased by individuals in the private insurance market.

LTC insurance is part of a shifting marketplace. In fact, some carriers have decided LTC insurance is no longer profitable and have stopped issuing policies. Others have been liberal in raising rates beyond the realm of affordability for many buyers. So what is the individual to do?

Some considerations in choosing an LTC policy:

Since there are so many different LTC insurance plans, it’s important to make sure the plan you select will meet your foreseeable needs. Some plans cover facilities-only care, while others cover both facilities care and home care.

When shopping for LTC insurance, you’ll want to ask these important questions:

What is the financial rating of the insurance carrier? You want them to be around when you need use your policy’s benefits.

Does the carrier have a history of filing for sizable rate increases?

What is the cost of LTC services in my geographic area?

What is the level of coverage I would actually need (for myself and my spouse)?

What inflation protection provisions are built into the policy?

With LTC insurance as with any other significant financial commitment, you’ll want to determine the best solution for your circumstances. If you’d like to learn more about LTC or have questions regarding your need for that type of coverage, be sure to consult with your personal financial advisor and a trusted professional insurance agent.

This article was prepared by Foster Group, Inc. Foster Group, Inc. is a strategic partner of the Center and serves as a consultant for educational programming related to financial planning. For more information about Foster Group, visit their website at www.fostergrp.com.

The information and material provided in this article is for informational purposes and is intended to be educational in nature. We recommend that individuals consult with a professional advisor familiar with their particular situation for advice concerning specific investment, accounting, tax and legal matters before taking any action.
Life often requires balancing good with bad.

Many Dakota prairie people have had a lifetime of soaking in the sun while putting out the wash on the clothes line, planting and cultivating corn, harvesting wheat or putting up hay. And don’t forget sitting on a boat waiting for the walleye to bite, hitting a little white ball around trying to put it into a hole in the ground, or laying on a towel feeling the warm rays console after a too-long Dakota winter.

It turns out that all those rays from the sun do something very good and important for us, but at the same time, do something that can be very bad.

First the advantages: exposure to the sun allows for melatonin level swings that encourages a good night’s sleep and a positive mood. Also the sun provides for the natural production of vitamin D that stimulates calcium and phosphate regulation, which in turn encourages bone growth and proper remodeling.

Although not proven, vitamin D is thought to be important also in cardiovascular health, cancer prevention, elderly falls reduction and immune function, all bringing a reduced death rate. We need more data to prove these last theories, but to sum it up: not only do plants need the sun, but humans do, too.

Scientists say that north of the 42nd parallel, or at about Omaha, the sun's energy is insufficient for vitamin D synthesis from November through February. Related is the condition we experience up here called seasonal affective disorder, or the winter blues. It is a real depressive condition due to not enough light, treated simply by giving those affected more exposure to the beams of the sun or another strong source of light.

On the other hand, there are disadvantages to too much sun, especially in those light-skinned, red or blonde-headed, blue-eyed Scandinavian/German/Scotch-Irish type. UV radiation is toxic to the skin, and it is the lifetime exposure that counts up. I see the ravages of Ol' Sol on the face of my patients with premature aging and cancers of several types. They come in with excessive wrinkles, sores that don’t heal, scales that are turning into little horns, and pigmented spots that are spreading.

How can something so good be also so bad?

Bottom line, enjoy the sun, but balance with sun screening, checking vitamin D levels, and seeing your doctor when skin bumps change.
SDBMOE Board News

By Margaret B. Hansen, PA-C, MPAS
Executive Director, South Dakota Board of Medical and Osteopathic Examiners

Application Disclosure Questions
The Board approved disclosure questions represent a 40 percent reduction in total question number and have now been in use by initial applicants as well as several professions’ renewal applications.

SDBMOE Member Update
Previous Board President Robert L. Ferrell, MD, was honored by the Federation of State Medical Boards (FSMB) at its annual meeting in April for his service as the outgoing president of the South Dakota Board. Vice President Mary S. Carpenter, MD, assumed the role of acting president and Walter O. Carlson, MD, was elected to serve as the Board vice president. Mr. Patrick J. Burchill is the Board secretary. Governor Dennis Daugaard appointed the following physicians to the Board in January 2013 and August 2012, respectively: Kevin L. Bjordahl, MD, and Jeffrey A. Murray, MD. In January 2013, the governor also reappointed David K. Erickson, MD, who was first appointed to the board in 2006.

What Licensees Need to Know
All statutes and administrative rules can be found on the Board’s website by using the “Forms, Laws and Rules” tab on the right-hand menu. Areas such as operation of the board, declaratory rulings, and the procedures for application, complaint and contested cases can be found by accessing ARSD 20:78. The physician medical practice act can be found by accessing SDCL 36-4 and ARSD 20:47.

What the Public Needs to Know
The SDBMOE protects the health and welfare of the state’s citizens by ensuring that only qualified physicians and allied health care professionals are licensed to practice in South Dakota. The Board is committed to following the letter and spirit of the South Dakota law regarding the Board’s duty to protect the health and welfare of the state’s citizens and conducts its business in an open and public manner as allowed by law. The SDBMOE welcomes the input and participation of the public to ensure that the best possible medical care is available in the state of South Dakota.

The SDBMOE meets quarterly for open public meetings with an agenda posted on the website and the front door of the Board office. The schedule for the remainder of 2013 is September 11 and November 13. The 2014 schedule is March 12-13, June 12, September 11 and November 13. The 2015 schedule is March 11-12, June 11, September 10 and November 12.
The South Dakota QuitLine offers training on a number of topics that can be helpful to health professionals who interact with tobacco users.

Presentations on these topics can be delivered in an onsite face-to-face presentation, a phone conference call, or a webinar, using your computer and phone.

Presentations may include any or all of these elements:

- Phone-based SD QuitLine — eligibility, referral process, coaching, medications
- Web-based SD QuitLine
- Overview of the 2 As and an R
- Tobacco use and impact data by SD counties
- Tobacco and nicotine addiction
- Smokeless tobacco — Health impacts and new products
- Secondhand smoke — Health impacts
- Chronic diseases and tobacco
- Reluctant quitters/stages of change
- Tobacco use and special populations
  - Native Americans
  - Youth 13-17 and 18-24
  - Pregnant women
  - Spit tobacco
  - Low SES
- Tobacco dependence and hospitalized patients
- SD QuitLine materials
- SD QuitLine use (program evaluation data)
- Social media supports for tobacco “quitters”

Webinars can be arranged with content tailored for your staff.

For more information or to request a webinar topic, go online to SDQuitLine.com/Providers or contact: Tammy Bauck at 605.224.6287 ext. 238 or tbauck@tie.net.
Tobacco Use: A Health Epidemic Aimed at Our Youth

By E. Paul Amundson, MD

It has been four years since the South Dakota State Medical Association (SDSMA) published, The Next Vital Sign, a special issue of South Dakota Medicine on the harmful effects of tobacco utilization. Since then, a lot has changed in the state, namely the public smoking ban which became law in 2009.

Nationally, as part of the Recovery Act, the U.S. Department of Health and Human Services invested $225 million to support tobacco prevention and control efforts in states, while implementation of the Affordable Care Act will expand access to tobacco cessation treatment programs – for the first time, Medicare and Medicaid will cover tobacco use cessation for all beneficiaries.

Unfortunately, despite the well-known and highly publicized health risks, youth and adult smoking rates that had been dropping for many years have stabilized. In 2008-2009, of all South Dakota youth ages 12-17 who had never smoked, 7.7 percent smoked a cigarette for the first time in the past year – ranking our state 47th in the nation. Of all young adults ages 18-25 who had never smoked, 8.4 percent smoked a cigarette for the first time in 2008-2009 – this ranked 23rd in the nation. We owe it to our youth to be even more aggressive against tobacco use in our state.

I encourage you to acquaint yourself with the services of the South Dakota QuitLine, which offers free medications and counseling for those attempting to quit. Of note, the QuitLine has expanded its policy – they now cover medications for those with three previously failed attempts (these participants are eligible for additional coverage one year after their last date of service) and dual therapies of both RX and OTC products concurrently. The QuitLine has also removed the attempt limit for priority populations: youth ages 13-17, pregnant women, Medicaid recipients, spit tobacco users and Native Americans, offering them unlimited access to QuitLine assistance.

As we all know, nearly all tobacco use begins during youth and young adulthood, and more often than not, young individuals progress from occasionally smoking to daily/habitual smoking. Each day across the U.S., more than 3,800 young people under age 18 smoke their first cigarette and more than 1,000 youth under age 18 become daily cigarette smokers. Although substantial progress has been made to reduce the prevalence of smoking since the first Surgeon General’s report in 1964, today nearly one in four high school seniors and one in three young adults under age 26 smoke.

Tobacco use has become a health epidemic for youth around the world as well as the U.S. In addition to cigarette smoking, use of other forms of tobacco by youth and young adults is cause for concern. Nearly one in five white adolescent males 12 to 17 years old uses smokeless tobacco, and one in 10 young adults 18 to 25 years old smoke cigars. The concurrent use of multiple tobacco products is common as well, with more than 50 percent of white and Hispanic male tobacco users reporting that they use more than one tobacco product. The numbers are staggering as this translates into over 1 million new tobacco users per year in the U.S. alone!

As you are probably well aware, cigarette smoking by youth and young adults is proven to cause serious and potentially deadly health effects immediately and into adulthood. This entire “addiction cascade” is precipitated by the highly addictive properties of nicotine, which keeps young people smoking longer and compounding the increased physical damage. Early abdominal aortic atherosclerosis has been detected in young smokers, affecting the flow of blood to vital organs such as the lungs. This leads to not only reduced lung function, but reduced lung growth which can increase the risk of chronic obstructive pulmonary disease later in life. Because few high school smokers are able to break free from the powerful addicting effects of nicotine, about 80 percent will smoke into adulthood. Among those who persist in smoking, one-half will die about 13 years earlier than his or her nonsmoking peers.

We need your help. Sometimes as clinicians, we are concerned about bringing up a tobacco user’s habit because we believe we may offend or alienate the patient, when in reality, research indicates our patients expect us to ask about the use of tobacco products and actually score physician visit satisfaction surveys lower when we don’t. This is especially important when interacting with teens and young adults.

As a physician, you are pivotal in accessing patients for tobacco utilization and helping those who wish to quit. So please:

ASK about tobacco use
ADVISE tobacco users to quit
REFER to a resource, such as the South Dakota QuitLine
Trust

By E. Paul Amundson, MD
Chief Medical Officer, DAKOTACARE

“A man who trusts nobody is apt to be the kind of man nobody trusts.”
– Harold MacMillan

Surveys indicate trust for other people and trust for institutions is at an all-time low. I was recently made aware of a product advocated over the Internet known as “Liquid Trust,” which is apparently oxytocin in a spray bottle...hmm, guess that’s all you need to have for people to trust you? Marketed products like this are certainly ominous. However, I think we can all think of items in the news (i.e., IRS) recently that would confirm, or at least not surprise us, that trust is in a very limited supply, yet heavily prized.

Our world in its current structure was designed around trust: we have trust that engineers properly construct the bridges and roads upon which we travel and the buildings we inhabit; our parents will feed and care for us in our youth; mankind will follow rules of civility so that we’re safe on our streets and in our homes; and medical personnel (doctors, hospitals, etc.) are properly trained and are sincerely looking out for our best interests while under their care.

Nothing bothered me more during my years in private practice than when patients would continue unhealthy behaviors which I repeatedly (hoping gently, yet firmly) advised them to alter. I felt they did not respect or trust my medical judgment. Do your patients trust you? If not, then why and what can you change to improve this? No doubt the U.S. health care system in its current structure has facilitated individuals to be less trusting of all key stakeholders in the health care market: doctors, hospitals, health plans, pharmaceutical and medical product device companies. Certainly we are all partially to blame for the present mess surrounding health care delivery and compensation. Returning to the core values of “patient first,” we all remember during our early medical training years, would serve us well in rebuilding the trust the general public has/had in physicians.

Historically, the July article has been used to reflect on the past 12 months. I am now entering my sixth year at DAKOTACARE and continue to be passionate about helping direct this company toward being a trustworthy partner which can assist you in caring for your patients. Believe me, this is not an easy task. I will continue to advocate for you, trusting you are keeping the patient’s interests foremost in your minds as you diagnose and treat our members.

The biggest change, by far, since this time last year, has been the looming implications of the Affordable Care Act (ACA). DAKOTACARE has been working diligently to stay abreast of all ACA mandates, in order to remain a strong and reliable health insurance company for South Dakotans. The ramifications of this often-debated effort to overhaul our health care payer system (which would imply we trust our government more than private industry) will, in my opinion, do more harm than good in working to rebuild trust between patients and their health care providers. It certainly is going to diminish the trust employees have had in their employers to provide a substantial portion of their health care insurance coverage. We will soon be entering a stage of “every man for himself” as employer groups (especially those with less than 50 employees) explore options on how to outsource all benefit offerings, via a health insurance “exchange” format.

You have no doubt seen the commercials promoting DAKOTACARE Freedom eMarket, our innovative entry into the private exchange market. With this, small group employers will have more control, employees maintain options, and everyone will have the service and support they need. It is the “freedom of choice with the protection of a group plan.”

Although I consider myself an optimist and a trusting person, I see nothing substantial in the ACA movement which will reduce overall health care costs. It may boost some quality parameters. However, improvements in impactful clinical outcomes remain to be seen. Time will tell. My focus going forward as chief medical officer will be increasingly on clinical quality measures. My work colleagues in our Provider Relations and Network Management departments plan to travel more throughout the state, in order to obtain your thoughts on how you see our profession changing and how DAKOTACARE can better assist you.

I look forward to another exciting year with this company. More importantly, I want to thank you for the TRUST you have placed in me. Please take time for yourself and your family. Have a great and relaxing summer!
You may have heard colleagues talking about value-based purchasing, which is the name of the pay-for-performance program implemented by the Centers for Medicare & Medicaid Services (CMS). This initiative started in the hospital setting, and was required in the Affordable Care Act and further defined in Section 1886(o) of the Social Security Act. CMS’ Hospital Value-Based Purchasing (VBP) Program started impacting hospital payments in fiscal year 2013, starting October 1, 2012.

The Hospital VBP Program applies only to hospitals paid under the Inpatient Prospective Payment System, and does not affect critical access hospitals at this time. This program is currently being funded by a 1 percent reduction from participating hospitals’ Diagnosis-Related Group (DRG) payments in FY 2013. This reduction increases a quarter of a percent each year, to a 2 percent maximum in FY 2017. Hospitals have the potential to earn their reduction back and even receive a bonus based on their total performance. Those facilities that do not have enough volume to meet the minimum requirements are excluded from the Hospital VBP Program and will not have their DRG payments reduced.

Hospital performance is distilled down into one Total Performance Score, which is calculated based on a number of inpatient quality measures derived from data CMS requires from Prospective Payment System (PPS) hospitals. These Total Performance Scores are compared to other hospitals in the program to determine each hospital’s payment adjustment. Hospitals get points toward their Total Performance Score in one of two ways:

- **Achievement** – perform better than average (50th percentile) or exceed the benchmark (mean of top decile).
- **Improvement** – score better themselves when compared to their own baseline performance.

The Total Performance Score is calculated based on the following domains (and weights) for FY 2015:

1. **Clinical Process of Care Measures** (20 percent): 12 measures including heart failure discharge instructions or antibiotics prior to surgery.
2. **Patient Experience of Care** (30 percent): Eight measures including satisfaction with physician communication, hospital cleanliness and quietness, and pain management.
3. **Outcome** (30 percent): Five measures including mortality for pneumonia/heart failure/acute myocardial infarction, patient safety indicators.
4. **Efficiency** (20 percent): One measure of Medicare spending per beneficiary based upon claims including risk-adjusted and price-standardized payments for all Part A and Part B services provided from three days prior to a hospital admission (index admission) through 30 days after the hospital discharge.

The first year of the Hospital VBP Program – FY 2013 – results have been published and were made available on the Hospital Compare website at www.medicare.gov/hospitalcompare/ on April 18, 2013 so anyone can download and compare scores. The performance period for the second year – FY 2014 – has passed, and we are waiting for final calculations. The FY 2015 performance periods ended June 30, 2013 for mortality measures and AHRQ patient safety measures, while the performance periods for clinical measures, HCAHPS, CLABS, and Medicare Spending per Beneficiary end December 31, 2013.

In reviewing the results from the first year of Hospital Value-Based Purchasing – FY 2013 – South Dakota did very well as a whole. For the 15 hospitals who qualified for VBP, 11 earned back their 1 percent and also received a 0.32 percent average pay increase. Four hospitals weren’t able to earn back their 1 percent and received a pay decrease of -0.25 percent on average. The table demonstrates how our state performed when compared to our neighbors.

To learn more about CMS’ Hospital VBP Program, you can visit their website at www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/hospital-value-based-purchasing. SDFMC staff can help you track your hospital’s performance, identify priority areas for improvement, and answer any questions about the Hospital VBP program. Please contact Ryan Sailor at rsailor@sdiqo.sdps.org or 605.444.4108, or Nancy McDonald at nmcdonald@sdiqo.sdps.org or 605.234.4144 with any questions.
Thank you to these organizations for their support of SDSMA’s Annual Meeting

Avera

Foster Group

Regional Health

South Dakota Foundation for Medical Care

Quality Improvement Organizations

Wellmark South Dakota

South Dakota

Dakotacare

MMIC

Sanford Health

Relax.
Discover solutions that put you at ease.

To join the Peace of Mind Movement, give us a call at 1.800.328.5532 or visit MMICgroup.com.
The SDSMA honored South Dakota physicians at the Presidential Inauguration Banquet held May 31 in Sioux Falls.

The SDSMA’s **Distinguished Service Award** recognizes a physician or lay person who has been of outstanding service to the medical profession in South Dakota. This year’s Distinguished Service Award was presented to the 13th dean of the Sanford School of Medicine, **Rodney Parry, MD**. Dr. Parry has devoted his professional life to the improvement of medicine and medical education in South Dakota and has a long history of service at several levels within the SDSMA and American Medical Association and also served as director of the South Dakota Cystic Fibrosis Center.

**SDSMA Immediate Past President Robert L. Allison, MD, presented Rodney Parry, MD, with the SDSMA’s Distinguished Service Award at the 2013 SDSMA Presidential Inauguration Banquet.**

The **Outstanding Young Physician Award** was presented to **John Berdahl, MD**. The Outstanding Young Physician Award was initiated by the Young Physicians Section of the SDSMA to be given to young physicians who are under 40 years of age or within the first eight years of professional practice after residency and fellowship training who are recognized for their outstanding achievements, dedication and service to the community and the SDSMA at the local, state and national levels. Dr. Berdahl is committed to improving and saving the vision of his patients as a leader in EyeCare America, which provides free eye care to the underserved, and he currently is director of the local Lions Eye Bank.

**SDSMA Immediate Past President Robert L. Allison, MD, presented John Berdahl, MD, with the SDSMA’s Outstanding Young Physician Award at the 2013 SDSMA Presidential Inauguration Banquet.**

The **SDSMA’s Community Service Award** is presented each year to physicians who separate themselves through outstanding work in the area of community affairs. This year’s recipient is **Al Lawrence, MD**. Dr. Lawrence has volunteered for 16 years to provide the medical service of County Coroner in Codington County. Throughout his career at Prairie Lakes Hospital, he has served as surgery chair and on the hospital’s Medical Executive Committee. He is an avid wrestler and former state champion, and has spent 17 years as a volunteer wrestling coach and trainer and recently was inducted into the South Dakota Wrestling Hall of Fame.

**Wendell W. Hoffman, MD** received the SDSMA’s **Media Award** and the SDSMA’s **Young at Heart Award**. The Media Award recognizes an individual who has helped promote the medical field and issues through outstanding medical and health care. Dr. Hoffman was instrumental in the publication of *The Story of Immunization*, the 2013 special edition of the journal *South Dakota Medicine* in the role of guest editor. The Young at Heart Award is presented to a physician who has inspired young physicians as a mentor, role model and leader.

**Karla Murphy, MD**, received the SDSMA’s **Past President’s Award**. This award is presented each year to the immediate past president of the SDSMA in recognition of their many years of work and dedication to organized medicine.

Five other physicians were recognized with the SDSMA’s **50-Year Award** for medical practice in South Dakota. Physicians who received that award were: **Marion R. Cosand, MD**, **Robert K. Johnson, MD**, **Wenzel J. Kovarik, MD**, **Leonard M. Linde, MD** and **Nicasio B. Saoi, MD**. These physicians have been practicing medicine for a half-century and have contributed greatly to the medical profession.

**Source: SDSMA Staff**
Ruling Jeopardizes Authority of State Medical Boards

A ruling by the 4th U.S. Circuit Court of Appeals could prove a significant impediment to the ability of state licensing boards to regulate the practice of medicine.

On May 31, the court ruled that a North Carolina dental board exceeded its authority when it attempted to stop nondentists from providing teeth-whitening services. In siding with the Federal Trade Commission (FTC), judges said the board is not shielded from antitrust scrutiny because it is not actively supervised by the state and its members are private market participants.

Legal experts say the decision could discourage physicians from serving on state boards and inhibit board members from making difficult regulatory decisions for fear of scrutiny. The opinion also could lead to legislative rules that impose more state oversight over licensing boards, doctors and attorneys say.

American Medical Association (AMA) President Jeremy A. Lazarus, MD, called the ruling “deeply flawed” and expressed concern that the decision will impair states’ authority to safeguard public health and patient safety. The Litigation Center of the AMA and the State Medical Societies had issued a friend-of-the-court brief in support of the dental board. The brief also was joined by medical societies in North Carolina, South Carolina, Virginia and West Virginia.

“It is crucial that all state regulatory boards – not just dental boards – carry out the responsibilities assigned to them by state legislatures without being intimidated by federal antitrust charges,” Dr. Lazarus said in a statement. “The American Medical Association strongly objects to subjecting state medical boards to second-guessing from the legal system and unfair antitrust scrutiny.”

The FTC hailed the decision as a victory for healthy competition among health care professionals.

The case started when the North Carolina State Board of Dental Examiners received a complaint that unlicensed teeth whiteners were providing services at shopping malls amid unsanitary conditions. From 2006 to 2009, the board issued cease-and-desist letters to the nondentists, warning them about a state ban against stain removal by unlicensed practitioners.

The nondentists complained to the FTC, and an agency administrative law judge found that the board’s conduct constituted an unreasonable restraint of trade. The board argued that its conduct was protected from antitrust oversight by the state action doctrine, a legal rule that applies to some state board conduct. The doctrine exempts from antitrust scrutiny state agencies that are actively supervised by the state.

The FTC argued that the board falls outside the doctrine because it is made up of market participants and is not actively supervised by a sovereign part of the state government. The dental board requested that the 4th Circuit review the FTC’s 2011 order.

Appellate judges rejected the board’s position. Because the board’s members are elected by other dentists, the board is a private entity and must prove state supervision, the court said.

“Here, the cease-and-desist letters were sent without state oversight and without the required judicial authorization,” the court said. “The board has pointed to certain reporting provisions and ‘good government’ provisions in North Carolina law, but those fall short. … At the end of the day, this case is about a state board run by private actors in the marketplace taking action outside of the procedures mandated by state law to expel a competitor from the market.”

The dental board is considering its legal options. Possibilities include requesting a rehearing by the 4th Circuit or petitioning the U.S. Supreme Court to hear the case.

While the court’s ruling focuses on the actions of a dental board, the same issues easily could play out with state medical licensing boards and may discourage physician participation.

The decision jeopardizes state boards’ authority to determine when nonphysician clinicians are providing a level of treatment that exceeds the education and training that they must complete to competently carry out the services and procedures they wish to perform.

The ruling also could lead to additional and unnecessary state regulations for boards.

The case is a reminder to state boards that they should review their structures to ensure that they are protected from antitrust scrutiny, said Lisa Robin, chief advocacy officer for the Federation of State Medical Boards.

She said the dental board’s members are elected by dentists. Other state boards, including a majority of medical boards, are elected or appointed by state officials. That approach provides a layer of protection if antitrust suspicion arises, she said.

Source: American Medical News and 4th U.S. Circuit Court of Appeals

“The Issue Is” is the SDSMA’s monthly update on key policy issues of importance to physicians.
Daniel J. Heinemann, MD, Inaugurated as SDSMA President

Daniel J. Heinemann, MD, of Canton became the 132nd president of the South Dakota State Medical Association (SDSMA) at the SDSMA 2013 Presidential Inauguration Banquet held May 31 in Sioux Falls.

A native of Dell Rapids, Dr. Heinemann received his medical degree from the University of South Dakota School of Medicine and completed his residency at Sioux Falls Family Medicine. Upon completion of his training, he established a new medical practice in Canton called Canton Family Physicians, where he practiced for 20 years.

Dr. Heinemann currently is a chief medical officer for Sanford Health Network and Sanford Clinic. During his first years at Sanford Health, Dr. Heinemann worked in the Office of Health Policy.

Dr. Heinemann has been a member of the SDSMA since 1983 and takes the helm from outgoing President Robert L. Allison, MD.

Other officers elected were:
• President-Elect: Mary J. Milroy, MD, of Yankton;
• Vice President: Tim M. Ridgway, MD, of Brandon;
• Secretary: John R. Fritz, MD, of Aberdeen; and
• Treasurer: H. Thomas Hermann, Jr., MD, of Sturgis.

Source: SDSMA Staff

SDSMA Center for Physician Resources Invites you to “A Physician’s Guide to Wealth Protection”

Are you and your loved ones protected in the event of a catastrophic event? Unsure? The SDSMA Center for Physician Resources invites you to participate in the second of five programs for physicians on personal finance. This presentation, “A Physician's Guide to Wealth Protection” will provide you the information you need to make decisions regarding the three key insurable risks we all face:

• Life;
• Disability; and
• Long-term care.

A live presentation will be held at 7pm Thursday, July 11 at CJ Callaway’s in Sioux Falls. Dinner is provided and registration is free to all SDSMA members and a guest. To reserve your place, contact the SDSMA at 605.336.1965 or meast@sdsm.org.

For those unable to attend the live event, a webinar will be held on July 25. Register for the webinar at www.sdsm.org.

Source: SDSMA Staff
CMS Provides Guidance on Telemedicine Rules

The Centers for Medicare and Medicaid Services (CMS) has issued a memorandum that aims to clarify telemedicine rules that Critical Access Hospitals (CAHs) must abide by.

CMS says it “welcomes the use of telemedicine by CAHs” and that it “has a great potential to expand availability of specialty care services, including emergency medicine services, to rural populations.” The memorandum clarifies CAHs Implications for Emergency Services Condition of Participation (CoP) and Emergency Medical Treatment and Labor Act on-call compliance.

Depending on the specific circumstances, there are cases when it is sufficient for a telemedicine-only physician to work with a qualified medical person on site to screen and stabilize and/or appropriately transfer individuals who come to the emergency department. There could also be times when an on-call physician would be requested to come to the CAH, even though a telemedicine-only physician is also providing services.

A summary of the memorandum is as follows:

- The CAH Emergency Services CoP does not require a physician to appear on-site whenever an individual comes to the emergency department.
  - A physician, physician assistant, nurse practitioner or a clinical nurse specialist with training or experience in emergency care must be immediately available by telephone or radio and available on-site within 30 minutes (60 minutes for CAHs in frontier areas that meet certain conditions). Under the CAH CoP, a physician is not required to be available in addition to a non-physician practitioner.
  - Under the CoP, a physician must be immediately available by telephone or radio contact on a 24-hour-a-day basis to receive emergency calls, provide information on treatment of emergency patients and refer patients. This requirement can be met by the use of a telemedicine physician as well as by a physician who practices on-site.

- If using telemedicine for emergency and other services, a CAH is not required to include the telemedicine physicians on its physician on-call list mandated under the Emergency Medical Treatment and Labor Act regulations.

- The CAH is required to have an on-call list reasonably related to the services it offers, composed of physicians who practice on-site at the CAH. This does not mean that physicians who practice on site must be on-call and available to appear in person at all times; nor does it mean that an on-call physician must be called to appear on-site in every case involving an emergency medical condition.

The entire memorandum can be found at www.cms.gov.

Source: CMS

SDSMA Delegation Attends AMA Annual Meeting

Attending the Annual Meeting of the American Medical Association (AMA) House of Delegates in Chicago in June were SDSMA President Daniel J. Heinemann, MD, SDSMA Delegate to the AMA Mary Carpenter, MD, SDSMA Alternate Delegate to the AMA Herb Saloum, MD, SDSMA CEO Barb Smith and medical students Benjamin Meyer and Emmamon Grosek.

Speaking to a crowd of physicians and medical students June 15, AMA CEO and Executive Vice President James L. Mandara, MD, gave delegates an update on the focus areas in the AMA’s Improving Health Outcomes initiative launched last year. The AMA has begun work to improve outcomes around cardiovascular disease and type 2 diabetes.

“We all know how these two conditions devastate our country, affect both our nation’s finances and public health, but most of all, how they adversely affect our patients – one by one,” he said.

Source: AMA

Blake Curd, MD, Appointed to District 12 Senate Seat

Blake Curd, MD, of Sioux Falls has been appointed to South Dakota’s District 12 Senate seat, Governor Daugaard announced June 5. Dr. Curd will fill the vacancy left by the resignation of Republican Senator Mark Johnston.

Dr. Curd, a member of the SDSMA, is a former state lawmaker, representing District 12 in the state House of Representatives from 2009 to 2011.

In 2010, he was a candidate for the Republican nomination for U.S. House of Representatives. Dr. Curd is an orthopedic surgeon and is president of Orthopedic Institute in Sioux Falls.

Source: South Dakota Office of the Governor
Complaint Investigations and Hearings of the South Dakota Board of Medical & Osteopathic Examiners

Every state has an agency or board that registers and licenses physicians. The South Dakota Board of Medical and Osteopathic Examiners (SDBMOE), made up of nine members appointed by the governor, grants licenses to physicians as well as various other health care professionals in South Dakota, and has oversight and regulatory power over physicians, including the power to cancel, suspend, revoke or limit a physician’s license after a hearing. SDBMOE membership is made up of six MD’s, one DO and two lay members. The results of disciplinary proceedings by the SDBMOE are made public and are required to be reported to the National Practitioner Data Bank.

Disciplinary proceedings generally start with the filing of a complaint with the board. Anyone can file a complaint against a physician; however, complaints are typically filed by a patient, a patient’s family, a member of a physician’s staff or another physician. If the problem appears to be a violation of the law, the SDBMOE will investigate it and, if a violation is confirmed, take legal action against the licensee.

Responding to a Complaint
It is always advisable to obtain the advice of counsel before responding to any patient complaint, even one that seems simple or completely unfounded. Practitioners are encouraged to engage counsel with experience dealing with administrative licensing proceedings as soon as possible if a notice is given of a pending proceeding before the SDBMOE.

SDBMOE decisions can be appealed to the Circuit Court, where the court may affirm the decision of the SDBMOE, overturn it or send it back to the SDBMOE for further proceedings. From there, it may be appealed to the South Dakota Supreme Court.

For additional information, download the entire SDSMA legal brief, “Complaint Investigations and Hearings of the South Dakota Board of Medical and Osteopathic Examiners” by visiting www.sdsma.org and clicking the Center for Physician Resources link on the homepage. You must be logged in to view SDSMA legal briefs. For questions about your login, contact Elizabeth Reiss at ereiss@sdsma.org or Donna Toay at dtoay@sdsma.org.

Through the Center for Physician Resources, the SDSMA is working hard to develop and deliver programs for members in the areas of practice management, leadership and health and wellness.

2014 SDSMA Member Directory – Updates Needed!

SDSMA staff is developing the 2014 SDSMA Member Directory to be published in December. Over 2,500 copies are produced and distributed annually and provided to all members. Many directories are also purchased by health-related agencies and referral organizations across the region. This is a widely-used and often-referenced publication with continuous use throughout the year.

Your help is needed to ensure the photo and information listed for you in the directory is current and accurate. Update your information today:

Online: Visit www.sdsma.org. Select the Membership link and choose “Update Your Record.”
Form: SDSMA recently mailed you a document with your current information listed.

Review the information and return the form by fax to 605.274.3274 or email Director of Administrative and Member Services Laura Olson at lolson@sdsma.org.

Photos: Please email a recent head shot or photo to Donna Toay at dtoay@sdsma.org.

Updates must be received by August 15.

For questions, contact Laura Olson at 605.336.1965 or lolson@sdsma.org.

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

Send photos to ereiss@sdsma.org.
# CME Events

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

## July 2013

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Title</th>
<th>Time</th>
<th>Location</th>
<th>AMAB PRA Category 1 Credit(s) available</th>
<th>Register online:</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 10</td>
<td>VA Tumor Conference</td>
<td>3-4 pm</td>
<td>VA Medical Center</td>
<td></td>
<td><a href="http://www.usd.edu/cme">www.usd.edu/cme</a></td>
</tr>
<tr>
<td>July 11</td>
<td>Pediatric Grand Rounds: Measuring Metabolic Activities in Cellular Models of Pediatric Disease</td>
<td>8-9 am</td>
<td>Sanford USD Medical Center - Schroeder Auditorium</td>
<td></td>
<td><a href="http://www.usd.edu/cme">www.usd.edu/cme</a></td>
</tr>
<tr>
<td>July 15-19</td>
<td>Mayo Clinic Internal Medicine Board Review</td>
<td>8-9 am</td>
<td>Rochester, Minnesota</td>
<td></td>
<td><a href="http://www.mayo.edu/cme">www.mayo.edu/cme</a></td>
</tr>
<tr>
<td>July 26</td>
<td>VA Medical CME Activity: Promoting Skin Integrity</td>
<td>12-1 pm</td>
<td>VA Medical Center Room 124</td>
<td></td>
<td><a href="http://www.usd.edu/cme">www.usd.edu/cme</a></td>
</tr>
</tbody>
</table>

## August 2013

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Title</th>
<th>Time</th>
<th>Location</th>
<th>AMAB PRA Category 1 Credit(s) available</th>
<th>Register online:</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 30</td>
<td>VA Medical CME Activity: Traumatic Brain Injury – Clinical Case Study</td>
<td>12-1 pm</td>
<td>VA Medical Center Room 124</td>
<td></td>
<td><a href="http://www.usd.edu/cme">www.usd.edu/cme</a></td>
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</tbody>
</table>

## September 2013

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Title</th>
<th>Time</th>
<th>Location</th>
<th>AMAB PRA Category 1 Credit(s) available</th>
<th>Register online:</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 5-8</td>
<td>Mayo Clinic Gastroenterology and Hepatology Board Review</td>
<td>8-9 am</td>
<td>The Westin Chicago River North Chicago, Illinois</td>
<td></td>
<td><a href="http://www.mayo.edu/cme">www.mayo.edu/cme</a></td>
</tr>
<tr>
<td>September 27</td>
<td>VA Medical CME Activity: Suicide Prevention</td>
<td>12-1 pm</td>
<td>VA Medical Center Room 124</td>
<td></td>
<td><a href="http://www.usd.edu/cme">www.usd.edu/cme</a></td>
</tr>
</tbody>
</table>

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

Contact: Donna Toay, South Dakota Medicine, 2600 W. 49th Street, Suite 200, Sioux Falls, SD 57105
Phone: 605.336.1965
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<th>Siouxland</th>
<th>Midlevel Recruiting</th>
</tr>
</thead>
<tbody>
<tr>
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<td><a href="http://www.erstaff.com">www.erstaff.com</a></td>
<td>605-610-4063</td>
<td><a href="http://www.sioulandstaffing.com">www.sioulandstaffing.com</a></td>
</tr>
<tr>
<td><a href="mailto:contact@erstaff.com">contact@erstaff.com</a></td>
<td></td>
<td><a href="mailto:info@sioulandstaffing.com">info@sioulandstaffing.com</a></td>
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MAYO CLINIC HEALTH SYSTEM

Mayo Clinic Health System in Wisconsin, is seeking full-time physicians, BC/BE in Family Medicine for our Eau Claire and Chippewa Falls locations. No inpatient or OB duties required. Established Hospitalist program. Telephone call of 1:26. 4-½ day work week. Common EMR & PACS across system. MAYO CLINIC HEALTH SYSTEM links Mayo Clinic’s respected expertise in patient care, research and education with Mayo’s community-focused multi-specialty groups in Minnesota, Wisconsin and Iowa. Today, more than 950 physicians practice in the 75 Mayo Clinic Health System communities. Chippewa Falls, a community of 15,000 located 20 minutes north of Eau Claire and Eau Claire, a university community with a metro area of 100,000, both offer excellent schools, abundant four season recreational opportunities, low crime and affordable housing. Eau Claire, the retail hub for West Central Wisconsin, is located 90 minutes from Minneapolis/St. Paul. Contact Cyndi Edwards, 800-573-2580 or e-mail edwards.cyndi@mayo.edu. EOE

MAYO CLINIC HEALTH SYSTEM

Mayo Clinic Health System – Chippewa Valley in Bloomer, WI is seeking an enthusiastic physician BC/BE in Family Medicine to join a collegial group of physicians at our Bloomer, WI location. The clinic is attached to a 25-bed Critical Access Hospital, which is the only hospital you would cover. Call of 1:5. MAYO CLINIC HEALTH SYSTEM links Mayo Clinic’s respected expertise in patient care, research and education with Mayo’s community-focused multi-specialty groups in Minnesota, Wisconsin and Iowa. Today, more than 950 physicians practice in the 75 Mayo Clinic Health System communities. EMR, PACS, and other on-line resources make it possible to practice state-of-the-art medicine in a rural atmosphere. Bloomer, a growing community of 3,500, offers a multitude of four-season recreational activities and is located 30 minutes north of Eau Claire. Contact Cyndi Edwards, 800-573-2580; edwards.cyndi@mayo.edu; or fax 715-838-6192. EOE

Come lead a highly successful, well-established residency into the future!

The Sioux Falls Family Medicine Residency Program is seeking candidates for Program Director. Our mission “devoted to providing an excellent education that prepares physicians for practice in the upper Midwest” has placed over 200 family physicians in rural communities. The program emphasizes full-spectrum training for residents, including obstetrics, in order to prepare graduates for practice in any setting. Established in 1973, we feature excellent, stable faculty and support staff, modern clinic facilities and wonderful residents. Two clinics, one of which is a FQHC, the other a more traditional practice, provide a wide variety of patient care opportunities for our residents. Our 9-9-9, community-based, university affiliated program is jointly sponsored by two progressive health systems providing two outstanding community hospitals, in close proximity, as resources for education. All residency faculty hold academic appointments with USD’s Sanford School of Medicine, a medical school emphasizing family medicine by state mandate. This symbiotic relationship allows many interactions with medical students, and opportunities for residents to develop teaching skills.

Sioux Falls, SD, named for the falls of the Big Sioux River, is a progressive city in southeastern South Dakota with a population of nearly 160,000 and a metro area of approximately 225,000. It is located at the junction of interstates 29 and 90. Healthcare, banking, insurance and agribusinesses are the city’s largest employers.

The successful candidate will demonstrate clear vision for the future of family medicine, an effective, collaborative leadership style, and strong clinical skills. Qualifications for medical licensure in South Dakota, faculty appointment to Sanford School of Medicine’s medical school and privileging at both community hospitals are required. Residency teaching and administrative experience are also required, with NIPDD training a plus. The program offers a competitive salary and benefit package.

A CV and letter of interest should be submitted to: Darci.Haraldson@c4fm.org or Attn. Darci, Sioux Falls Family Medicine Residency Program, Center for Family Medicine, 1115 East 20th St., Sioux Falls, SD 57105-1013. Fax: (605) 335-1006.
Mayo Clinic Health System Oakridge in Osseo, WI is seeking a physician Board Certified/Board Eligible in Family Medicine with interest in both in/outpatient care opportunities. Full scope family medicine without OB. Call of 1:4. Daytime Hospitalist manages hospitalized patients Monday through Friday. Mayo Clinic Health System links Mayo Clinic’s respected expertise in patient care, research and education with Mayo’s community-focused multi-specialty groups in Minnesota, Wisconsin and Iowa. Today, more than 950 physicians practice in the 75 Mayo Clinic Health System communities. EMR, PACS, and other on-line resources make it possible to practice state-of-the-art medicine in a rural atmosphere. Osseo is a thriving four season community with an excellent educational system located 25 minutes south of Eau Claire, WI. Contact Cyndi Edwards, 800-573-2580; e-mail edwards.cyndi@mayo.edu or fax 715-838-6192. Site qualifies for J-1. EOE

Mayo Clinic Health System – Red Cedar in Menomonie, Wisconsin, is seeking physicians BC/BE in Family Medicine. OB and OB optional opportunities. In-patient care is part of practice. Call of 1:10. 4 ½ day work week. EMR, PACS. We are a 45 physician multi-specialty clinic and a 25-bed critical access hospital. We offer a competitive salary guarantee and complete benefit package. Mayo Clinic Health System links Mayo Clinic’s respected expertise in patient care, research and education with Mayo’s community-focused multi-specialty groups in Minnesota, Wisconsin and Iowa. Today, more than 950 physicians practice in the 75 Mayo Clinic Health System communities. Menomonie, a city of 16,000, is home to the 9,300 students at the University of Wisconsin-Stout and located one hour east of Minneapolis/St. Paul. Perched on the banks of Lake Menomin, the community offers strong schools, safe neighborhoods, and abundant four-season recreational opportunities. For more information contact Cyndi Edwards at 1-800-573-2580; fax 715-838-6192; or edwards.cyndi@mayo.edu. EOE

Mayo Clinic Health System – Northland is seeking two physicians, BC/BE in Family Medicine for our Barron, WI and Rice Lake, WI locations. You may expect a busy practice in a financially stable organization, committed to both high quality patient care and patient satisfaction. One position is with OB, the other is OB optional. OB call of 1:6. General call of 1:13. Provider will participate in the daytime Hospitalist rotation every 8th week. EMR, PACS, and other on-line resources make it possible to practice state-of-the-art medicine in a vacation-like setting. Mayo Clinic Health System links Mayo Clinic’s respected expertise in patient care, research and education with Mayo’s community-focused multi-specialty groups in Minnesota, Wisconsin and Iowa. Today, more than 950 physicians practice in the 75 Mayo Clinic Health System communities. The community offers excellent schools, abundant four season recreational opportunities, low crime and affordable housing. Barron & Rice Lake are located in Northwest Wisconsin, 100 miles east of Minneapolis, MN and 50 miles north of Eau Claire, WI. Barron is a community of 3,500 & Rice Lake is a community of 8,500. Contact Cyndi Edwards, 800-573-2580; edwards.cyndi@mayo.edu; fax 715-838-6192. Site qualifies for J-1. EOE

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