Addressing the Physician Shortage Epidemic One Shot at a Time

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May 2011, BS Biology
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Member of the WARM entering class of 2011- UWSMPH

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Recently I spent a Saturday evening at the Kohl Center watching two championship games as part of the Wisconsin Interscholastic Athletics Association (WIAA) state high school girls basketball tournament. Apart from the sheer dedication and perseverance of the teams to reach such success, parent commitment to their kids could not be denied. All around me were seated families with elementary and middle school-aged children who had the sport of basketball engrained in their skin. One dad kept repeating to his three-foot-tall daughter, "That could be you one day." Another father pointed out every amazing pass and creative shot to his sixth grader, who already had been playing in basketball leagues throughout the summer. She wanted to be at the Kohl Center one day. To have an opportunity of a lifetime. A buzzer-beating shot. A gold medal.

These young basketball hopefuls were presented opportunities to play during the summer and to watch some of the best high school players on the biggest stage in the State of Wisconsin. The early support from their family, teammates, and coaches was apparent. Some of these children may play at the Kohl Center themselves one day, maybe even beyond high school for college or professional basketball. They had dreams. While state basketball may not be everyone's ambition, shouldn't we as adults, communities, and leaders strive to provide all students with this kind of support for their chosen goals?

And this includes professions in rural health.

Programs and opportunities that introduce and "coach" rural health to students so they can aspire to serve a rural community as a health care worker are essential. While the career possibilities in the healthcare field are numerous, I will focus on physicians. It is no mystery that rural areas are experiencing severe physician shortages, which is predicted to continue to increase in future years. According to the Rural Wisconsin Health Cooperative (RWHC) *Eye on Health* October 2010 newsletter, "fewer than 10 percent of physicians practice in rural communities."[1] What is more impressive is the fact that nearly 25% of people in the United States are living in these rural areas, which compose '75 percent of the United States' land mass.' [2] [3] In order to permanently begin to address these physician shortages in rural communities, we must commit to educating students from these areas at an early age on what defines rural health care and what it means to be a rural practitioner. It is, in my opinion, far easier than selling rural life to a licensed doctor not ever accustomed to rural culture and life.

First, students must define and understand rural health to know if it would be an area they would enjoy working in. Professor Ian Couper summarizes rural health care as providing services without specialist and technological care and "where resources, both human and material, are lacking."[4] He further emphasizes rural health care as "best provided by a team of health care workers and is based on the principles of primary health care."[5] In Wisconsin I have heard people refer to rural as north of Highway 29, farm country, or anywhere not urban or metropolitan. Bosak and Perlman took the latter definition for Wisconsin counties in 1982. A county was rural if it did not contain a city of at least 10,000 people and did not have 50% of the population living in towns of at least 2,500 people.[6] Today, the United States Census Bureau further breaks down urban and rural on a continuum based on population density. From my experience, on the other hand, rural health is not defined by a specific definition but rather is reflected in the lifestyle and people.

Growing up in Park Falls, Wisconsin (Population 2,793), the "Ruffed Grouse Capital of the World," had me located in the midst of 850,000 acres of national forest land with a 25-bed

hospital. Living in this community containing the most remote hospital in Wisconsin has provided me with a unique perspective into what defines rural life and health. Rural is the smell of maple syrup cooking every spring, the beds of trilliums carpeting the woods, having a whitetail deer chase a black bear 10 feet in front of me while out jogging (and in that order!), calling back to a great-horned owl, witnessing a young bobcat on the front porch of my house eating bird suet, tractor rides, tamarack swamps, harvesting wild rice on a cool fall day, paying 20 cents more per gallon of gas than in suburban/urban areas, being willing to drive long distances, canceled school days due to extreme snowfall, vibrant maple leaf colors, the sounds of gnawing chainsaws, continued gunshots during whitetail deer hunting season, fresh hay being made, roosters crowing, picking 20 ticks off your pant legs, mosquitoes, and starry nights. While this is by no means a complete listing, rural living is definitely more than spending an annual week-long vacation camping or snowmobiling near the woods.

This rural lifestyle provides insight into the health care needs of rural populations and hence the "health" component of our definition. Health is a vague term that reflects comparing an individual value to a standardized norm; however, not all bodies can be judged strictly from one quantitative medical reading. Another issue present is with the many kinds of health: mental health, systemic health, maternal health, oral health, and so on. While these broad terms certainly have margins that overlap, treating the overall health of rural communities with limited access to major medical facilities is a challenge. With all of the facets in place to address the general health of these areas, it is again difficult to focus on a single definition. One strategy may be to present information regarding some of the traditional hardships rural communities have faced.

Hardships include but are not limited to a greater prevalence of alcohol and smokeless tobacco use in rural communities (40% of rural 12th graders reported using alcohol compared to 25% of urban students), increased suicide rates in men, and rural people having less money (24% of rural kids are living in poverty).[7] Other barriers exist in these rural areas for finding care such as lack public transportation and geographic isolation. In addition, there are numerous federally designated Health Professional Shortage Areas (HPSA's) for medical, dental and mental health in Wisconsin. Other rural hobbies and jobs make for a unique set of health needs. Examples include the logging industry, recreational fishing, snowmobiling, farming, and wood carving.

My rural exposure and upbringing has helped develop my perspective on students in rural communities. I come from an average working family with the only history of a physician being my great-great grandfather, who--according to his obituary--walked through deep snow drifts to get to the houses of his patients over 100 years ago. Medicine as a career became the logical culmination of my varied interests and desire to be challenged. I have worked hard to initiate connections and find opportunities to solidify my decision throughout the years. Because of this path, I have learned much about what I would have found helpful and want to encourage other students. I have been thinking about my journey and an ideal system, if there could ever be such a thing. While students arrive at medicine as a career in many different ways, both direct and indirect, I would like to share my thoughts on how to "coach" an interested student from an educational systems standpoint.

An ideal career education system would invite physicians and other healthcare workers to speak to students--beginning in elementary and at latest, middle school--as part of a career day. A tour of a local hospital or explanation of some of the instruments or procedures would further expose students to the career. Being open and honest about the challenges of rural medicine as a physician while offering a brief timeline of events necessary to reach the goal would give a

sufficient introduction to capture the minds of truly interested students. Other students may later decide they would like to pursue such a career and remember this positive experience. Meanwhile, the students not interested in medicine receive a healthy dose of information about a community hospital, are exposed to a positive role model, and are encouraged to further their education after high school. Even these students may transition to the health care field one day.

Students can then continue preparing academically for the rigors of medicine and the competition outside of a rural community setting. In academic exposure I would include dissection of organs such as whitetail deer hearts or pig kidneys and lungs. Availability of organs will vary among schools but a few creative options are available. During whitetail deer hunting season, students could bring in frozen deer hearts from a family harvest. Talking with a nearby butcher shop to save parts or working with the Wisconsin Department of Natural Resources (DNR) to obtain a large fish or animal to dissect would be great.

During high school the guidance counselor should offer contact information to interested students for volunteering with the city or county's public health department, local nursing homes, and with service activities such as *Relay for Life*. Working together as an interdisciplinary and multidisciplinary team, especially where health outcome disparities tend to be greatest, is important to learn at this impressionable age. By increasing student understanding of and collaboration with public health programs, a more well-rounded approach toward rural medicine beyond the level of diagnosis is introduced. This ideal would support continuation throughout their career journeys. Also, early professional connections and mentoring can be made and possibly continued throughout college.

At least some of Wisconsin rural clinic systems and hospitals offer mentoring opportunities and observation time with professional providers to high school students interested in pursuing a career in the healthcare field. Maturity levels vary greatly during this time, but I feel it is an excellent option to begin witnessing direct patient care if deemed appropriate. Even meeting with a facility's educational coordinator to discuss future observations and getting a tour of the building would be advantageous. This would be an optimal time to learn about the necessary requirements associated with observing in a clinic setting and to begin obtaining the prerequisites such as the importance of confidentiality, required immunizations and TB tests. Another presentation of this material could be effectively delivered through elementary, middle school and high school career events.

During college it is imperative for clinics, hospitals, research foundations, and education centers to offer rural observation time and internship opportunities to students with a keen interest in pursuing rural medicine. Research in Pennsylvania has shown an individual who grew up in a rural setting and who expressed a desire to practice family medicine at the start of medical school had a 36% chance of practicing in a rural area after finishing with medical school compared to the 7% chance of students without both criteria.[8] Minnesota did a study demonstrating the effect of third year clinical rotations done in a setting where "community teaching and preceptorship" was heavily emphasized.[9] The results showed 59% recruitment to rural areas compared to 18% of students not in such a setting.[10] Although this data does not include the long-term retention rates of these physicians, I would argue that exposure in a rural clinic/hospital setting through internship and observation experiences in high school and at the undergraduate college level would increase the recruitment and retention of rural physicians to these areas.

Today firm regulations and policies regulate when and how students observe in a clinical setting. I understand the annual student time restrictions so providers are not constantly

inundated with students, but to not offer positive experience-based positions to committed students only risks turning them from medicine and rural health. Considering the extent and time these students have already committed, professional resources and mentors are essential during this time for continued success. An Associate Professor at the University of Wisconsin, Dr. Theresa Duello, often says, "Advising is how to get there, mentoring is how to get there intact." I feel the mentoring component during high school and college is best gained through internship or observation experiences and can most certainly influence a student's future career direction.

Also, it is not initially easy to venture into the world of a hospital or clinic community. People are hurting. People are dying. Having not gone to medical school yet, you may not know what to expect nor are desensitized from it. Everything is new and unfamiliar but somewhere during the time of standing in the corner of the exam room or operating room watching, never thinking you could do such a procedure, a transition occurs. Yes, you still have a lot to learn but you begin to feel the empowerment of wanting to strive to make your community the healthiest it can be and to help these rural patients. You become willing to overcome any obstacle for the patients who you see in church, the grocery store, and at the gym. And during this time, nobody will understand your situation better than the doctors you are working with who have been through it themselves. Some may become mentors--people there to pick you up if you fall, quite literally--while others seem to display quintessential bedside manner or a perfect amount of humor. They help you understand that the journey is not easy but it will be worth it.

I say this because I have been fortunate to have experienced this story. These rural communities may not offer extensive advanced placement credits for college or international high school trips. Yet, the exposure I have had with rural Wisconsin medicine to this point has given me the privilege of recognizing that although remote, quality of care does not need to be compromised. Community leaders need to help ensure that other students can be offered such opportunities in the future. Rural health care professionals should inspire others to "pave their own way." Students need to learn the good and bad of medicine as a career, about different provider personalities, and how much rural practitioners relate to rural people. They ought to understand more about medicine as an art and a science. Don't get me wrong, I am not naïve to the fact that students are often paired with doctors who 1) enjoy spending time with students and 2) are willing to put their work and dictations off to make for a positive experience. Although the list could extend for pages, I would like to share some of the most influential experiences I have had observing as a pre-med undergraduate student in various settings throughout the state.

First is the day when a middle-aged woman came into the emergency room from overdosing on morphine. After becoming conscious again and slowly recovering, I began casual conversation with her. We discussed our love of ice fishing for perch and of course, the Friday night fish-fry. She wanted to leave with enough time to get her Wisconsin fish-fry. This lady had made a mistake in her life, but she told me she would never do it again. Other opportunities allowed me to speak with patients after having surgeries, but I quickly found conversations were not always confined to procedural success. An elderly lady spoke about her cows while growing up, her wilting willow tree, and her husband, who had passed away less than a year ago. It was therapeutic for her to have me listen, and I quickly realized medicine does not always come in the form of extreme interventional treatments or surgeries. Other patients were much more stubborn. One man thought he had a stroke but refused to come to the clinic until after he had finished castrating his cattle. I spoke with him in length about the cattle and his farm. Priorities in rural areas most certainly are seldom altered.

Oncology. A mom with two daughters younger than me had a weekly check-up. Her cancer had already metastasized to the liver but she was strong. As weak as the cancer treatments were making her, she refused to fail her girls. After her daughters left the room to get a book from the car, the mother turned and released her held-back tears in front of the doctor--her confidant--and me. She cried not for herself but for her family. After everything that this woman had gone through, a mother's love prevailed. Everyone was so concerned for her well-being but in the end, her greatest pain was for her very own girls. Girls like my sister and me. Yet, she gave her daughters the ultimate lesson on love and life.

Patients continue to teach me the most, but the practitioners I have worked with have also provided significant insight into medicine as a career. An elderly gentleman came into the emergency room after his family suspected a stroke. The hospitalist on duty lifted the patient's gown to listen to his heart. He shivered from the doctor's cold hands. The physician said, "My hands are cold but my heart is warm." The patient and his wife smiled. Another instance was when a little girl came in with a nasty cold. She stared at the doctor with eyes as large as silver dollars, back straight, and completely solemn face. She was going to scream any second until the physician I was working with busted out the "itsy bitsy spider." He sang the whole song, complete with hand motions. The girl laughed and was at ease for a quick throat check. On a different occasion, a six-year-old girl came in after getting a laceration on her leg from a broken mirror. She refused to have "stitches" put in but would allow the doctor to do "sutures." These tricks are learned by providers, providers who love their jobs and sharing their talents with curious students. A lot of things are not found in books.

Another motivating factor behind my decision to commit to rural medicine began with a newspaper article. When I am at school in Madison and read about my small hometown of Park Falls in the Wisconsin State Journal in not one but multiple articles, it really puts a personal perspective on the health profession shortages that are present. I remember reading the article "Life and Death in Park Falls" in March 2010.[11] This article discussed a head-on automobile collision of a couple traveling from Madison to Bayfield. The couple was rushed via ambulance to Flambeau Hospital, a Critical Access Hospital, in Park Falls. The nearest trauma center was in Marshfield 100 miles away. The article continued by illustrating further obstacles to providing quality care in such remote settings. I read it and thought about how physician shortages and advocacy are going to be addressed if students from my generation do not commit to these rural communities. Rural citizens can talk about "brain drain" in these areas but who is actively participating to address the concerns? Who is investing in their community's students, especially after research shows that most students who return to rural areas after college are students who grew up in a similar setting?[12] Some foreign physicians fill vacant slots and definitely play an integral role in providing care in these areas, but often times it is only for three years to obtain a visa and they move on. Where is the continuum of care so imperative to preventive medicine and long-term health?

On a final note, I would like to tell a story. One medical resident I worked with spent an entire morning teaching me about x-rays and CT scans. Although I am by no means proficient at reading them yet, I did familiarize myself with organs and was oriented to some of the major conclusions drawn from such diagnostic tests. After happily teaching me, the resident had me promise to help other students one day when I became a doctor. At that time I shrugged it off and said of course, although I was still far from believing in a medical school fate. Now, after I have secured a position in medical school, I will reply with a confident yes and urge others to do the same. For today's students are tomorrow's doctors. We need to plan for the future and it

begins one student at a time, one shot at a time. Providing an opportunity of a lifetime. A role model. A voice that says, "You can do it."

"Don't quit when the tide is lowest, for it's just about to turn;
Don't quit over doubts and questions, for there's something you may learn."
-Jill Wolf

[1] Rural Wisconsin Health Cooperative (RWHC), "Catholic Association Speaks up for Rural," *Eye on Health* October 2010: 1.
[2] "What's Different about Rural Health Care?" National Rural Health Association, accessed April 10, 2011, http://www.ruralhealthweb.org/go/left/about-rural-health/what-s-different-about-rural-health-care/what-s-different-about-rural-health-care.
[3] RWHC, "Catholic Association Speaks up for Rural," 1.
[4] Ian Couper, "Rural Hospital Focus: Defining Rural," *Rural and Remote Health* 3 (online), 2003: 205. Available from: http://www.rrh.org.au.
[5] Ian Couper, "Rural Hospital Focus," 205.
[6] Jeanine Bosak and Baron Perlman, "A Review of the Definition of Rural," *Journal of Rural Community Psychology* 3 (1982): 25.
[7] "What's Different About Rural Health Care?" National Rural Health Association (NRHA), accessed April 10, 2011, http://www.ruralhealthweb.org/go/left/about-rural-health/what-s-different-about-rural-health-care/what-s-different-about-rural-health-care.
[8] Robert G Brooks, MD *et al,* "The Roles of Nature and Nurture in the Recruitment and Retention of Primary Care Physicians in Rural Areas: A Review of the Literature, *Academic Medicine* 77(2002): 792.
[9] Robert Brooks, MD *et al,* "The Role of Nature and Nurture in the Recruitment and Retention of Primary Care Physicians in Rural Areas," 793.
[10] Robert Brooks, MD *et al,* "The Role of Nature and Nurture in the Recruitment and Retention of Primary Care Physicians in Rural Areas," 793.
[11] David Wahlberg, "Life and death in Park Falls," *Wisconsin State Journal*, March 7, 2010, accessed April 8, 2011, http://host.madison.com/wsj/special-section/rural_health/article_ba2a8908-288a-11df-a13c-001cc4c03286.html.
[12] Robert Brooks, MD *et al,* "The Role of Nature and Nurture in the Recruitment and Retention of Primary Care Physicians in Rural Areas," 792.