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HEALTH CARE AND PLAINS NATIVE AMERICANS: STRIVING TOWARDS A
CULTURALLY COMPETENT MEDICAL SCHOOL CURRICULUM

by

Benjamin Jacobs

A Thesis Submitted in Partial Fulfillment
Of the Requirements for the
University Honors Program

Department of Anthropology
The University of South Dakota
May 2020

The members of the Honors Thesis Committee appointed
to examine the thesis of Benjamin Jacobs
find it satisfactory and recommend that it be accepted.

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ABSTRACT

Health Care and Plains Native Americans: Striving Towards a Culturally Competent

Medical School Curriculum

Benjamin Jacobs

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My honors thesis will explore the curriculum at the USD Sanford School of Medicine (SSOM). I plan to examine the curriculum for cultural competence and diversity education, specifically on Native (American Indian/Alaskan Native) peoples. My primary goal is to increase the educational importance the Sanford School of Medicine places on the culture of all groups, especially, Native peoples. My topic is important because diversity and inclusion are essential parts to creating a unified team. Furthermore, this topic is especially relevant here in South Dakota due to the number of Native peoples in the state. South Dakota has the fourth highest percent population of American Indian or Alaska Natives at 9.0% (United States Census, 2018).

There are two major parts to my study. The first was to do a wide range of research on the disparities of Native peoples and the curriculum of the SSOM. Furthermore, my research included meeting with staff and faculty at the SSOM to see what opportunities to better understand the health care needs of Native people are offered to medical students. The second was to send out a survey to the current medical school students to see what curriculum is being taught regarding Native peoples and their knowledge and retention of the information that is presented. Also, in the survey, medical

students had the opportunity to suggest topics and experiences they would like to implement to interact more fully with diverse peoples. With the information from the survey I will report upon what material is being taught relating to Natives and diversity in the medical school. Additionally, I compiled the medical students' suggestions and show some common themes, topics, and experiences students had and perhaps propose implementing some of these suggestions for future medical students.

KEYWORDS: Diversity, Education, Curriculum, Natives

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CHAPTER ONE

Introduction

Diversity, inclusiveness, and bias-prevention training are important aspects of educating a caring and unbiased health care provider. This education becomes especially important for training future physicians. Physicians are the leaders of the healthcare team and their influence can radiate to all other health care professionals. As the world is becoming more diverse, there are more cultures, spiritualities, and perspectives of health than ever before. Learning about our ever-growing diverse world is important for future physicians to be able to treat all patients with respect and sensitivity. Further, educating future physicians on current health disparities across cultures is vital to maintaining consistent excellent care for all. American Indians and Native communities are perhaps the group that experiences the most health disparities in the United States. American Indians (AI) and Alaska Natives (AN) have a heightened mortality ratio of 1.3 deaths to every 1 death of all other U.S. races (Indian Health Service, 2011). Examining these disparities and actively working towards eliminating them becomes specifically important, here in South Dakota, as South Dakota has the fourth highest percentage of American Indian and Alaska Natives (United States Census, 2018). Future physicians should be actively aware of health disparities and readily working towards decreasing them and removing bias from their interactions with patients.

The belief that medical students (i.e. those who plan to interact and care for Native Peoples) lack opportunities to learn about Native communities is tested in this research thesis. First, a literature review outlines the importance of diversity training and

the health disparities of Native peoples. Then, the thesis is tested with a survey of medical students at the University of South Dakota Sanford School of Medicine. The survey gauges students' exposure to learning about American Indians and different understandings of health. Furthermore, this survey gauges, from a medical students' perspective, what can be done to increase exposure to Native peoples and decrease barriers to more effectively improve health care interactions and clinical outcomes. Next, the results of the survey are presented and analyzed during the results and discussion sections. Finally, the next steps and conclusion sections try to better understand how we move forward with the results of the thesis and ultimately implement more diversity curriculum for medical students here in South Dakota.

CHAPTER TWO

My Personal Interest

I personally became interested in the study of diversity curriculum, specifically Native peoples, after a shadowing experience in 2017. In the intensive care unit (ICU) a Native American woman wanted to burn sage for her husband who was in a coma due to a brain bleed. When the physician did not allow this, I saw differing worldviews collide. This experience opened my eyes to how important it is for health care providers to be culturally sensitive and effective communicators. During lunch that day, I asked the fourth year SSOM medical student who was working with the physician if they had ever seen anything like this. I was told that this was certainly not the first experience she had. I continued to ask her about her training and if she was ever explicitly taught about Native peoples and their differing social and cultural values. Her response was “no”. She also mentioned that she wished there were some required trainings and experiences for her to be prepared for when these encounters occur.

This shadowing experience opened my eyes to the differences between traditional Native approaches to health and Western, biomedical understandings of health. It is important to say that there is not just one perspective of health. Every group and every culture can have varying degrees not only to how they classify health but also how they treat those with health conditions and ailments. Seeing the spouse of the patient and the physician disagree on treatment was something I had never experienced. To better understand the differences between these two approaches, let us compare and contrast them.

For the purposes of this thesis we will define traditional Native approaches to health through a Lakota perspective. One difference between traditional Native health and Western, biomedical health is the training to become a health care provider. The major health care providers in Native communities are often referred to as “Medicine men.” The training of a traditional healer (medicine man) involves an apprenticeship. A traditional healer will train his apprentice over time and teach him how to heal through ceremonies and other rituals. The training of a traditional healer differs greatly from the training of a physician in Western, biomedical health. The training of a physician includes a four-year undergraduate degree, a four-year medical degree, and a residency training program ranging from 3-7 years in length. Additionally, physicians can complete fellowships or additional degrees anywhere throughout this process.

Another difference between traditional healers and physicians is how they classify health and heal their patients. Although this is not always the case, physicians tend to classify health on a physical level with objective measures through tests and procedures. Traditional healers on the other hand tend to classify health both physically and spiritually through more subjective measures like spiritual imbalance. From my shadowing experience we can see that the Native woman wanted to perform a traditional healing ceremony to heal her husband as the physician wanted to perform a more invasive medical procedure instead. The training, classification of health, and treatment strategies differ between traditional healers and physicians. The differences in understandings of health contribute to how an individual wants their health care accessed and treated. Since the Native man’s wife was from an Indian Reservation in South Dakota, she felt that performing the ceremony of burning sage would be helpful in

healing her husband. Since the physician was not from this community, he felt that performing a more invasive procedure would be more helpful. Though both the physician and wife wanted to help the man, their understandings of health and healing were different.

My shadowing experience that day in the ICU motivated me to create a survey about exposure to and education about Native peoples at the SSOM. In March 2019, I sent a survey to the classes of 2019, 2020, 2021, and 2022 at the SSOM. The results of the survey are what I will primarily report on in this thesis. My goal with this thesis and survey is not to reveal that the University of South Dakota Sanford School of Medicine does not care for Native peoples. Rather, my goal is to increase medical student exposure to Native communities, increase medical student feedback, and ultimately decrease the prominent health disparities among Native communities here in South Dakota. As a future physician, my hope is that this thesis will shine light on the importance of diversity and integrating sensitivity into medical school curriculum. Further, my hope is that increased exposure will increase medical students' confidence in treating peoples of diverse backgrounds.

CHAPTER THREE

Disparities Among Native Peoples

A health disparity is “a type of health difference that is closely linked with social, economic, and/or environmental disadvantage” (healthypeople.gov). Health disparities are critically important as their impacts can be felt through a specific demographic of people. Although a chronic illness like diabetes mellitus might impact millions of people, certain groups can be at much greater risk due to their social, economic, and/or environmental disadvantages. American Indians and Alaska Natives are perhaps the most susceptible, at-risk group to a myriad of chronic diseases and ailments. American Indians (AI) and Alaska Natives (AN) have a heightened mortality ratio of 1.3 AI/AN deaths to every 1 death of all other U.S. races (Indian Health Service, 2011). This ratio is significantly higher than every other race.

Although this statistic is staggering, what is more troubling is that this ratio of AI/AN deaths found in 2011 is even higher than the one reported from 2000-2002. According to the book *Cultural Proficiency in Addressing Health Disparities*, “The 2000-2002 IHS report that the mortality rate was 1,039 per 100,000 for all areas, which is significantly higher than the 2001 figure of 854.4 per 100,000 for all races” (Kosoko-Lasaki et.al, 2009, 230). When taking 1,039 deaths from AI/AN and dividing it by 854.4 death from all other races, we get a mortality ratio of 1.216. This means that from IHS data in the early 2000’s to the IHS report in 2011, the mortality ratio increased by nearly 0.1.

Life expectancy for Native peoples is also significantly less than that of all other races in the United States. According to the book *Cultural Diversity in Health and Illness*, “Life expectancy at birth for the American Indian population was about 63.6 years and has now increased to 72.6 years, but it is still 5.2 years less than the U.S all races life expectancy of 77.8 years (2003-2005 rates)” (U.S. Department of Health and Human Services 2012, 211). Although this 5.2-year gap is quite large, the gap is continuing to grow. “American Indian and Alaska Natives born today have a life expectancy that is 5.5 years less than the U.S. all races population (73.0 years to 78.5 years, respectively)” (Indian Health Service 2011). Despite the fact that the life expectancy for all other U.S. races has grown from 77.8 to 78.5 years (0.7-year growth), AI/AN life expectancy has only increased from 72.6 to 73.0 years (0.4-year growth) over the past decade.

In addition to a heightened mortality ratio and decreased life expectancy, Native peoples face many other health disparities. Below is the full Mortality Disparity Rates Fact Sheet from the Indian Health Service (2011).

MORTALITY DISPARITY RATES

American Indians and Alaska Natives (AI/AN) in the IHS Service Area

2009-2011 and U.S. All Races 2010

(Age-adjusted mortality rates per 100,000 population)

	AI/AN Rate 2009-2011	U.S. All Races Rate – 2010	Ratio: AI/AN to U.S. All Races
ALL CAUSES*	999.1	747.0	1.3
Diseases of the heart (heart disease)	194.1	179.1	1.1
Malignant neoplasm (cancer)	178.4	172.8	1.0
Accidents (unintentional injuries)*	93.7	38.0	2.5
Diabetes mellitus (diabetes)	66.0	20.8	3.2
Alcohol-induced	50.5	7.6	6.6
Chronic lower respiratory diseases	46.6	42.2	1.1
Cerebrovascular disease (stroke)	43.6	39.1	1.1
Chronic liver disease and cirrhosis	42.9	9.4	4.6
Influenza and pneumonia	26.6	15.1	1.8
Drug-induced	23.4	12.9	1.8
Nephritis, nephrotic syndrome (kidney disease)	22.4	15.3	1.5
Intentional self-harm (suicide)	20.4	12.1	1.7
Alzheimer's disease	18.3	25.1	0.7
Septicemia	17.3	10.6	1.6
Assault (homicide)	11.4	5.4	2.1
Essential hypertension diseases	9.0	8.0	1.1

* Unintentional injuries include motor vehicle crashes.

NOTE: Rates are adjusted to compensate for misreporting of American Indian and Alaska Native race on state death certificates. American Indian and Alaska Native age-adjusted death rate columns present data for the 3-year period specified. U.S. All Races columns present data for a one-year period. Rates are based on American Indian and Alaska Native alone; 2010 census with bridged-race categories.

As you can see from the Mortality Disparity Rates table above, there are many health disparities among Native peoples. Some of the most shocking numbers include a 6.6-fold increase in Alcohol-Induced deaths, a 4.6-fold increase in mortality due to a chronic liver disease and cirrhosis, and a 3.2-fold increase in mortality due to diabetes. In addition to all the disparities present in the Mortality Disparity Rates table, infant mortality is increased among Native Americans. “In 2000-2002, infant deaths among Native Americans were 1.3 times those of U.S. all races (8.5 per 1000 versus 6.8 per 1000)” (Kosoko-Lasaki et.al 2009, 236-37). The substance abuse rate for Native American communities is also much higher than that of all other communities. “Alcohol abuse is rampant in Native American communities. Native Americans use and abuse alcohol and other drugs at a younger age and at a higher rate than the general U.S. population” (Kosoko-Lasaki et.al 2009, 238).

Despite speaking to many health disparities among Native peoples, we certainly have not mentioned all of them. Native peoples also suffer from obesity and oral health issues at an alarming rate. One statistic that stood out to me in my research was, “In total, 68% of AI/AN children have untreated dental caries. One-third of AI/AN schoolchildren report missing school because of dental pain, and 25% report avoiding laughing or smiling because of the way their teeth look” (Nash and Nagel, 2005).

With such overwhelming health disparities, it is vital that future medical professionals are educated and aware of these issues. Further, it is imperative that South Dakota focuses on these disparities as South Dakota has the fourth highest percent population of American Indian or Alaska Natives at 9.0% (United States Census, 2018). Now that we have discussed the myriad of health disparities among Native peoples, we

will look at the current curriculum of the SSOM to see how the future physicians of South Dakota's only medical school are educating their students on this urgent problem.

CHAPTER FOUR

Curriculum and Diversity Education at the SSOM

To better understand the opportunities to interact with Native peoples and populations on reservations, I spoke with the Associate Dean(s) of Diversity and Inclusion at the SSOM. I first met with Dr. Gerald Yutrzenka and then, after he retired in 2019, I met with Dr. Denyelle Kenyon. Before I discuss what opportunities I have learned about during my meetings, I must say that I am likely to leave something out. From talking with Dr. Yutrzenka and Dr. Kenyon, it is clear that diversity training is important to the SSOM. I also learned that the SSOM is always searching to increase medical student exposure to diverse communities. This was eminent to me as I learned that several opportunities were added for students within the last few years and that there are plans for expansion in the future.

To examine the opportunities that medical students have to interact with Native peoples and populations, I will start by giving some general opportunities present to students throughout all four years of medical school. After giving some of those general opportunities, I will explain the SSOM Pillar system and what opportunities there are during each Pillar.

Perhaps the place to start when talking about diversity training and education is the Diversity Dialogues series. Per the Sanford School of Medicine's website

(<https://www.usd.edu/medicine/ssom-diversity-programs>)

Diversity Dialogues is a monthly, informal theme-based series of discussions during the fall and spring semesters. The sessions are open to any interested faculty and students from the School of Medicine, the School of Health Sciences and the greater community. During the fall semester, Diversity Dialogues features presentations that give students an enhanced perspective on various social, cultural and health-related elements that exist among the diverse body of people whom they are likely to encounter during their training and future practices. In the spring semester, the focus is directed toward presentations by students about their experiences in health-related outreach efforts. [USD SSOM Diversity Programs, 2019]

As the quote said, medical students, undergraduates, community members, etc. are all welcome to attend. Since becoming aware of the Diversity Dialogues series in 2019, I personally have made an effort to attend them. The topics of these dialogues differ from month to month. I have been to Diversity Dialogues on refugee populations, Native populations, LGBTQ+ health, etc. This opportunity is one that certainly serves to not only increase awareness of the populations medical students will interact with in the future but give insight into the health disparities present in such communities. From the Diversity Dialogues I have gone to, there are roughly 30-40 people in attendance. These sessions are provided during the 1-hour break first year medical students have from their lectures so that they could attend if they wanted. Despite the Diversity Dialogues being held in a break time and providing lunch to those who attend, only a modest portion of medical students attend them. I can even recall during a Diversity Dialogue held by Deb

Worth on March 4, 2019, there seemed to be more faculty and staff in attendance than medical students.

Another opportunity open to all medical students to interact and learn about Native peoples is the Coyote Clinic. Per the SSOM's website, "Student doctor volunteers from the Sanford School of Medicine perform a focused history and physical exam and present the case to practicing physician volunteers who oversee the students' work. Junior medical students are paired with senior students to enhance learning and expose younger students to patient care early in their medical careers. The clinic is operated by a steering committee of elected second, third and fourth-year medical students". (USD Coyote Clinic, 2019) This opportunity can give medical students exposure to communicating and treating diverse patients (potentially including Native persons). Having these experiences can aid medical students in their future encounters with Native peoples in their residency and beyond.

Now that we have looked at some general opportunities available to medical students throughout all four years of medical school, let's take a closer look at the Pillar system of the SSOM. Medical school is a four-year program; however, the SSOM has a three Pillar system that extends through the four years. Pillar 1 starts the first day of medical school orientation and ends around the following December. Pillar 1 lasts roughly 18 months and consists primarily of pre-clinical, organ-centered blocks. Medical students during this Pillar attend lectures, participate in case-based small group learning, and experience early clinical exposure. After Pillar 1, students go to their clinical clerkship sites either in Sioux Falls, Rapid City, Yankton, or at a FARM site for Pillar 2. FARM or Frontier and Rural Medicine Program is a program that gives medical students

the unique opportunity to experience their clerkship in a rural community. Pillar 2 serves as the first major clinical exposure for medical students. After Pillar 2, medical students enter Pillar 3 for the final 17 months of their 4-year medical education. Pillar 3 has a lot of elective time and allows medical students to participate in research, sub-specialty rotations, and even out-of-state and global experiences. Now that we know about the Pillar based system of the SSOM, let's look at the opportunities for medical students to interact with diverse peoples in each pillar.

During the very first week of Pillar 1, students are presented with some diversity education in their orientation week. Although this education is not necessarily about Native peoples, Dr. Yutrzenka informed me that in the past some Lakota elders and Native community members would come speak to the medical students. In particular, Dr. Yutrzenka mentioned that Gene Thin Elk, Former Director of Native Student Service at the University of South Dakota, would come to speak.

During Pillar 1, medical students take a Foundations of Clinical Medicine course. As a part of that course, Pillar 1 students have a diversity requirement they need to fulfill. Although I am unsure of the specifics, I learned that medical students have opportunities to interact with Native peoples and populations on reservations to fulfill this requirement. I was also informed that it has been in discussion that some Native American cultural training be included during this course as a requirement.

A few other opportunities that stood out to me for Pillar 1 students was the Pierre Indian Center trip in February and the annual Distinguished Lecture in Native American Health. Both serve as informative ways for medical students to learn about and potentially interact with Native folks. One final opportunity I learned through my

meetings was that after successfully passing a block exam, students can visit reservation communities for 2-3 days during their “off” week. Pillar 1 students take an exam on Mondays and if they pass that exam, they get the rest of the week off. Although some students travel, see family, etc. on these days, there are other opportunities for medical students during this time. Dr. Yutzenka mentioned that students can go to Kyle, South Dakota (on Pine Ridge Reservation) and Eagle Butte, South Dakota (on Cheyenne River Reservation) for experiences centered around Indian Health Service (IHS) facilities.

During Pillar 2 medical students are at their clinical sites either in Sioux Falls, Rapid City, Yankton, or one of the FARM sites. I learned that in the middle of Pillar 2, there is a Cultural Immersion Week / Cultural Diversity Week. Throughout the week medical students interact with many diverse groups and communities. As a part of this week, students interact with a Hutterite community of South Dakota and participate in service-learning activities. Although not required, I was told that many students take the opportunity to learn more about the communities and people on Rosebud or Pine Ridge Reservations. Further, students can speak with cultural leaders and see the facilities and historical sites associated with that community during that week. At the end of the week students are required to write a paper and present a poster about their experiences. In addition to this week, I learned that during the summer of Pillar 2 there is something called the Friday Academy. This serves as an opportunity like the Diversity Dialogues for medical students to come and learn about a variety of diverse populations. Dr. Kenyon mentioned that case studies are also done and include LGBTQ+ folks and Native peoples.

Pillar 3 is the final pillar of medical school at the SSOM and the last step before residency. During Pillar 3 there are many opportunities to do rotations and electives.

Medical students during this time can do rotations at IHS facilities and take electives in more rural areas that have a high population of Native peoples. In addition to this, Pillar 3 medical students are still welcome to attend Diversity Dialogues and participate in the Coyote Clinic.

The opportunities I have mentioned in this chapter are by no means an exhaustive list of all the opportunities the SSOM gives to its students to interact with Native peoples and populations on reservations. Rather, the mentioned opportunities were the ones I learned from my own personal research and from my meetings with Dr. Yutrzenka and Dr. Kenyon. One takeaway from this chapter is that although the SSOM has many opportunities to interact with Native peoples and their communities, there are no required interactions. As discussed in Chapter 2 of this thesis, my personal encounter with the fourth-year medical student confirms this. To better understand if medical students are choosing to partake in these opportunities, and how those experiences have impacted them, a survey was done. The hypothesis for this survey was that although there may be many opportunities, they are insufficient in preparing medical students to interact with and treat Native peoples. In the following chapters we will discuss the survey methods and results to see if this hypothesis holds true.

CHAPTER FIVE

Rationale

The findings of the previous chapters revealed the importance of diversity education and highlighted the overwhelming health disparities among Native populations in the United States. Thus, I developed a survey to understand what information is being taught about Native peoples at the Sanford School of Medicine and the students' feedback on the information being presented. Additionally, the survey allowed students to report upon what barriers, if any, they witnessed in differing understandings of health between Western medicine and traditional Native approaches.

The belief that medical students have minimal opportunities to learn and interact with Native peoples and communities is tested in this survey. Furthermore, the idea that medical students witness barriers in differing approaches to medicine is also discussed. My hypothesis through my personal experience in Chapter 2 was that medical students are undereducated about Native peoples and the health disparities associated with Native communities. My hope is that unveiling the shortcomings in educating medical students will begin a shift in curriculum and alter how students are exposed to the concepts of cultural sensitivity, diversity, and relevant health disparities. With increasing awareness of health disparities and the issues affecting certain groups, specifically Native peoples, changes can be made to better equip medical students with skills to treat patients and form strong relationships with them.

CHAPTER SIX

Methods

Materials

The survey (see Appendix C) was created de novo by the author and approved by the Institutional Review Board (IRB) at the University of South Dakota. It was conducted online via Google Forms, an online data collection tool. The IRB approval can be found in Appendix A. Most questions used a multiple-choice format, but 5-point Likert scales, multiple-checkbox, and free answer questions were also included.

The first section attempted to gauge participants demographics (i.e. Medical School Pillar, Gender, Ethnic Self-Identification, State primary/secondary education was given, Undergraduate Institution) using multiple-choice and short answer formats. In this section, participants were asked about their demographic information to better understand how much information they received in schooling, or otherwise, about Native peoples before entering medical school. Additionally, participants had the opportunity to choose “Prefer not to answer” or to leave a question blank to indicate that they did not want to answer the question for every question in this survey.

The next section used a 5-point Likert scale and multiple-checkbox question format. Participants were asked about how informed they feel they were regarding American Indians prior to and during medical school on a 5-point Likert scale (i.e. Not informed [1] to Very Well Informed [5]). Participants also were asked in what ways they have been informed about American Indians (e.g. College Coursework, Media, Volunteering, Employment, American Indian Heritage, Family, Friends, None of the

Above). An “Other” option was also available for participants who felt inclined to insert something not listed that helped them learn about American Indians.

The final section of the survey consisted of three, 5-point Linkert scale questions and two short/long answer open-ended questions. The first two of the three 5-point Linkert scale questions asked the participants how likely they would be to interact with American Indian Communities and populations on Reservations in the future (i.e. [1] Not Likely to [5] Very Likely). The final 5-point Linkert scale question asked participants if they have ever observed barriers between traditional Native approaches to health and Western, biomedical understandings of health (i.e. [1] Never to [5] Very Frequently). The survey concluded with two open-ended questions asking participants to give their experiences and feedback to the SSOM for future medical classes (e.g. “How might the Sanford School of Medicine improve or enhance your ability to interact with and learn about Native peoples?”) and leave final comments.

Procedure

The survey was distributed to medical students in all four current SSOM medical school classes (Classes of 2019, 2020, 2021, 2022) via email by Kay Austin, Medical School Registrar. The survey was first sent out February 25, 2019, and sent out again March 4, 2019, and finally March 11, 2019. Participants could submit the survey anytime between February 25, 2019, and March 15, 2019. Included in the invitation to participate was a short description of the survey’s purpose, the target group, and a link to the survey on Google Forms. Students who opened the survey link were directed to Google Forms via secure connection and presented with a complete description of the survey and informed consent form. All participants were informed that their participation was

voluntary and to be completed at their leisure. Acceptance of the informed consent was implied if the respondent clicked “continue” on the opening page to access the survey. Minimal identifying data were collected from participants ensuring that all responses were anonymous. The identifying information that was collected included Medical School Pillar, gender, self-identification, state most primary/secondary education was in, and undergraduate institution. To ensure as much anonymity as possible, the response data was restricted solely to the committee and no individual survey responses were used—only group results.

CHAPTER SEVEN

Results

Participants

Participants were 103 medical students (54 males, 49 females) at the University of South Dakota Sanford School of Medicine who voluntarily completed an online survey. All respondents completed the survey between February 25, 2019 and March 13, 2019. Most respondents were Pillar 3 medical students (n=56), but other pillars and joint-degree students represented were Pillar 2 students (n=14), Pillar 1 students (n=32) and MD-PhD students (n=1). Most respondents (97%) identified as white (n=100). Other racial groups represented by respondents were Asian (n=1), White + Native American (n=1), and Mixed Race (n=1). Table 1 describes the participants included in the study:

Table 1 – Participant Demographics

	Count (n=103)	Percentage (%)
Med School Pillar		
Pillar 1	32	31.1
Pillar 2	14	13.6
Pillar 3	56	54.4
MD PhD	1	0.97
Gender		
Male	54	52.4
Female	49	47.6
Non-Binary	0	0.0
Self-Identification		
White	100	97.1
Asian	1	0.97
White + Native American	1	0.97
Mixed Race	1	0.97

Survey Data

The final sample (n=103) (see Table 1) included 54 males and 49 females from all Pillars and dual-degree programs the Sanford School of Medicine offers. In addition to obtaining demographic information, the survey asked participants in which state they had received most of their primary/secondary education in (K-12). Unsurprisingly, most respondents (n=76) indicated this to be in South Dakota. Other states represented were Iowa (n=8), Minnesota (n=8), Colorado (n=2), California (n=1), Florida (n=1), Indiana (n=1), Montana (n=1), Nebraska (n=1), Ohio (n=1), Oregon (n=1), Wyoming (n=1) and Non U.S. (n=1). Table 2 describes the geographic location in which medical students received most of their primary/secondary (K-12) education.

Table 2 – Primary/Secondary Education Geography

	Count (n=103)	Percentage (%)
Primary Education		
South Dakota	76	73.8
Iowa	8	7.8
Minnesota	8	7.8
Colorado	2	1.9
California	1	0.97
Florida	1	0.97
Indiana	1	0.97
Montana	1	0.97
Nebraska	1	0.97
Non-U.S.	1	0.97
Oho	1	0.97
Oregon	1	0.97
Wyoming	1	0.97

In addition to recording the state in which they received most of their primary/secondary education, participants were asked from which college or university

they received their undergraduate degree from. Again, South Dakota was well represented (n=64). The top South Dakota institutions represented were The University of South Dakota (n=31), South Dakota State University (n=14), Augustana University (n=13), among others. There was one participant who opted out of answering this question. Thus, the total participants for this question was (n=102). Table 3 denotes the institutions and states where medical students received most of their Post-secondary education.

Table 3 – Where Obtained Post-Secondary Education

	Count (n=102)	Percentage (%)
<u>South Dakota</u>	64	62.7
University of South Dakota	31	30.4
South Dakota State University	14	13.7
Augustana University	13	12.7
All Other	6	5.9
Minnesota	9	8.8
Nebraska	8	7.8
Iowa	5	4.9
Colorado	3	2.9
Illinois	2	2.0
Pennsylvania	2	2.0
Indiana	1	0.98
Kansas	1	0.98
Louisiana	1	0.98
Missouri	1	0.98
Montana	1	0.98
North Dakota	1	0.98
New York	1	0.98
Wisconsin	1	0.98

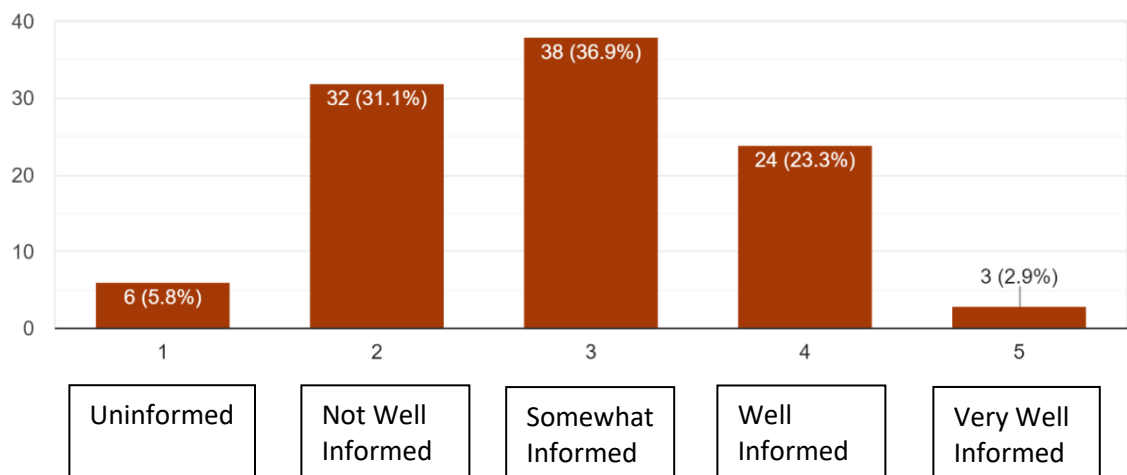
Obtaining data from medical students regarding where most of their K-12 and post-secondary education had taken place may help to further understand possible

differences in education about Native peoples. When asking, “**Prior to attending Medical School, how informed do you feel you were regarding American Indians?**”, the mean response was 2.86 (SD 0.88) based on a 5-point Likert scale (i.e. Not informed [1] to Very Well Informed [5]). The most chosen option selected was “Somewhat Informed [3]” (36.9%) while the least chosen option was “Very Well Informed [5]” (2.9%). (See Figure 1)

Figure 1

Prior to attending Medical School, how informed do you feel you were regarding American Indians?

103 responses

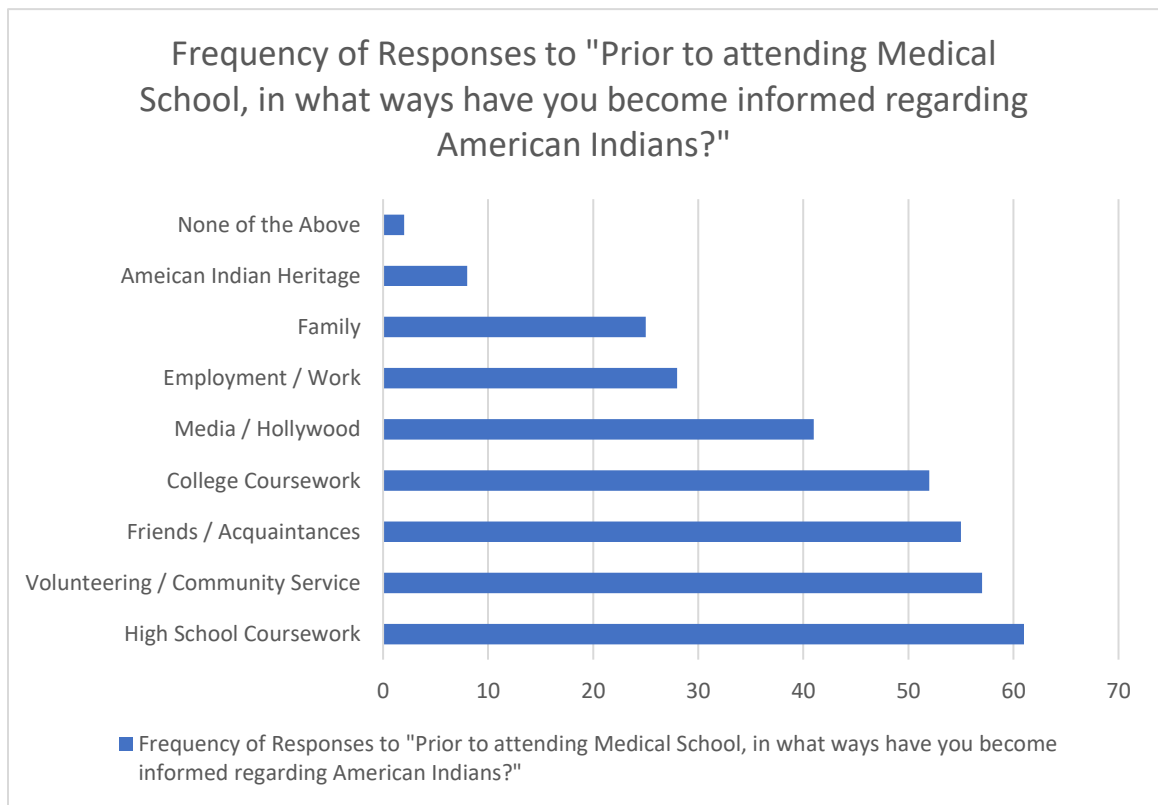


In addition to tracking these results, I analyzed how a participant’s answers changed depending on in which state they received most of their K-12 education. Medical students who received most of their K-12 education in South Dakota (n=76) had a mean

score of 2.92 while the mean score for medical students who received most of their K-12 education outside of South Dakota (n=27) was somewhat lower at 2.33.

After asking about how informed medical students were about American Indians prior to attending medical school, I asked **“Prior to attending Medical School, in what ways have you become informed regarding American Indians?”** This question was asked using a multiple checkbox format where a participant could select any and all responses. Additionally, participants could select “None of the Above” or add their own category/categories. Additional responses offered included: “Sports and School Activities” (n=1), “Undergraduate Organizations” (n=1), “Festival of Nations in Minneapolis” (n=1), and “Museums / Documentaries (n=2)”. Figure 2 shows the frequency of responses of participants

Figure 2

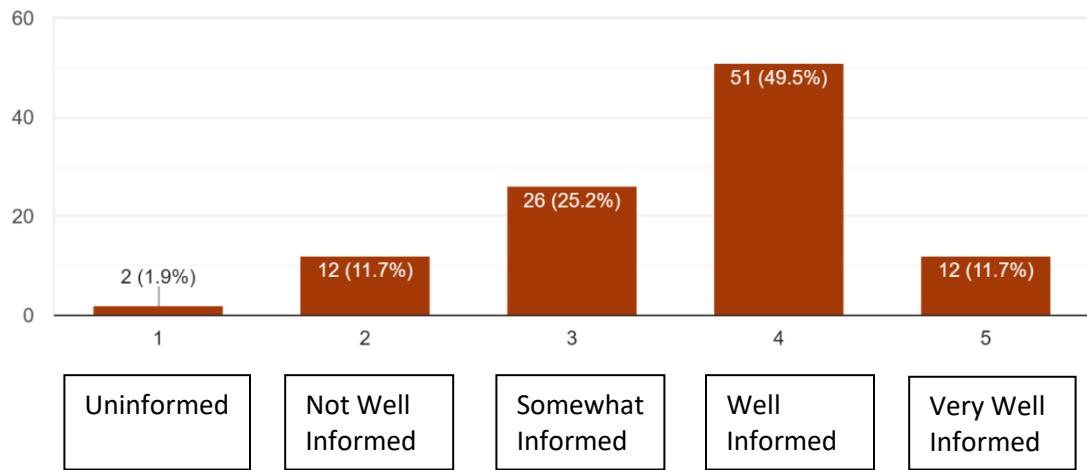


Respondents were then asked, “**During Medical School, how informed do you feel you were regarding American Indians?**” The mean response was 3.57 (SD=0.84). The most chosen option was “Well Informed [4]” with the least chosen option being “Uninformed [1]”. Figure 3 shows a graphical representation of the results.

Figure 3

During Medical School, how informed do you feel you are regarding American Indians?

103 responses



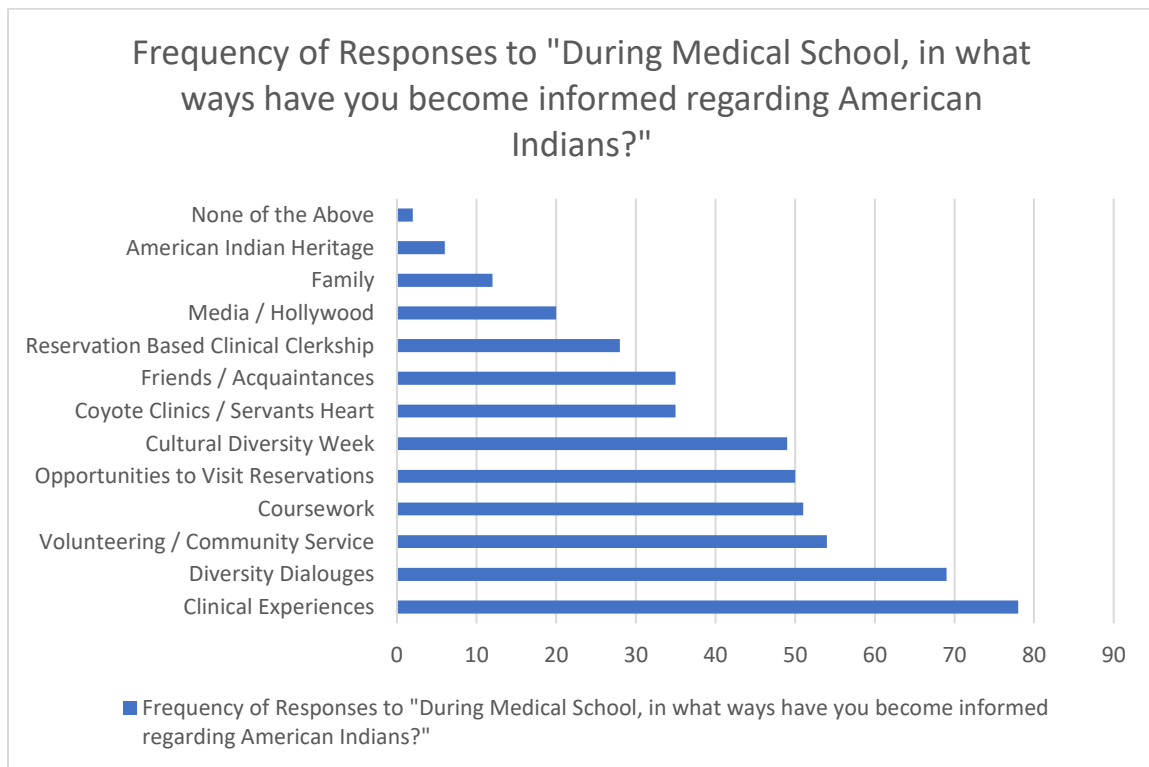
The purpose of asking these questions was to compare medical students’ sense of their being informed about American Indians before attending medical school with their sense of being informed about American Indians while attending medical school. The key findings of this question were (1) the mean “degree of being informed” increased from 2.86 before attending medical school to 3.57 during medical school, (2) the most chosen option selected changed from Somewhat Informed [3] to Well Informed [4], and (3) the least chosen option changed from Very Well Informed [5] to Uninformed [1]. These three

key findings seem to indicate that medical students' exposure to American Indians has increased since starting medical school.

After asking about how informed medical students were during medical school about American Indians, I asked **“During Medical School, in what ways have you become informed regarding American Indians?”** This question was asked using a multiple checkbox format where a participant could select any and all responses.

Additionally, participants could select “None of the Above” or add their own category/categories. Figure 4 shows the frequency of responses of participants (n=103). In addition to the given categories on the graph, “Dog Rescue” (n=1), “CHOPR Seminars” (n=1), “Pierre Indian Learning Center Trip and Welcome Table” (n=1), and “Cultural Competency Training with Urban Indian Health Center (Theresa Henry)” (n=1) were also mentioned. Figure 4 shows the frequency of responses of participants (n=103).

Figure 4

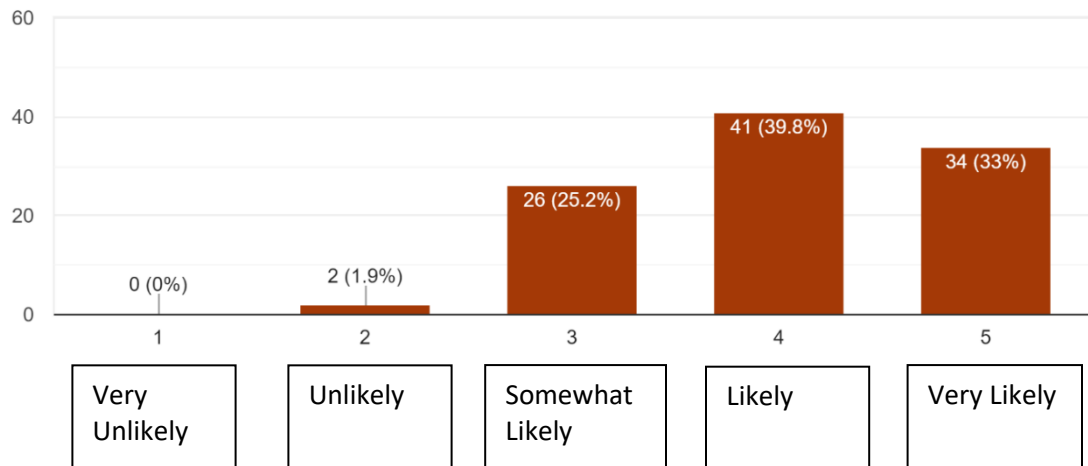


Following these sets of questions, participants were asked how likely they were to interact with American Indian communities and populations on reservations in the future. When asking, **“In the future, how likely would you be to interact with American Indian Communities?”** a 5-point Likert scale was used (i.e. Very Unlikely [1] to Very Likely [5]). Out of all participants (n=103), the mean was 4.04 with a Standard Deviation of 0.67. The most chosen option was “Likely [4]”. The least chosen option selected was “Very Unlikely [1]”. Figure 5 shows a graphical representation of the results.

Figure 5

In the future, how likely would you be to interact with American Indian Communities?

103 responses



The purpose of asking this question was to gauge medical students’ interests in working with American Indian communities in the future to help reduce health disparities.

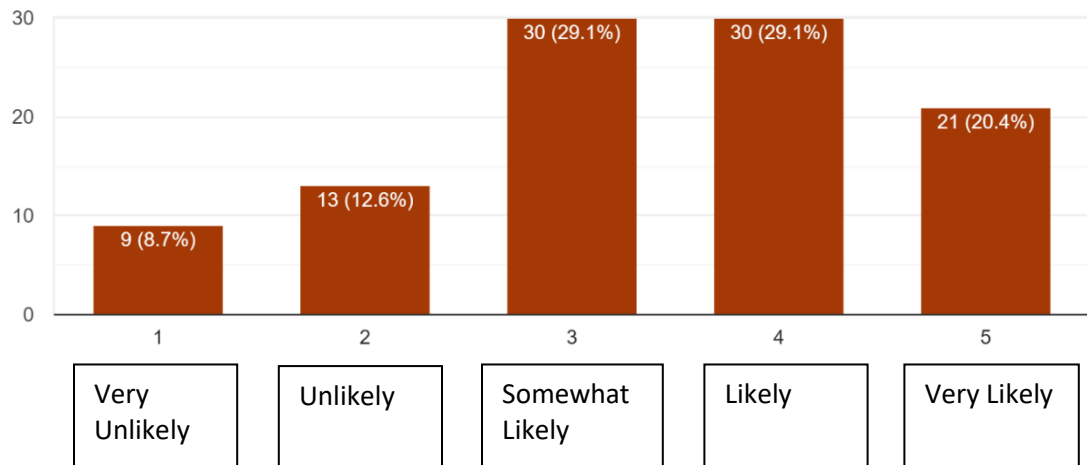
Reservations here in South Dakota also show clear disparities some of which have been outlined in Chapter 4 of this thesis. When asking, **“In the future, how likely would**

you be to interact with populations on Reservations?” a 5-point Likert scale was used (i.e. Very Unlikely [1] to Very Likely [5]). Out of all participants (n=103), the mean was 3.40 and the Standard Deviation was 1.44. The most chosen option was both “Somewhat likely [3]” and “Likely [4]”. The least chosen option was “Very Unlikely [1]”. Figure 6 shows a graphical representation of the results.

Figure 6

In the future, how likely would you be to interact with populations on Reservations?

103 responses



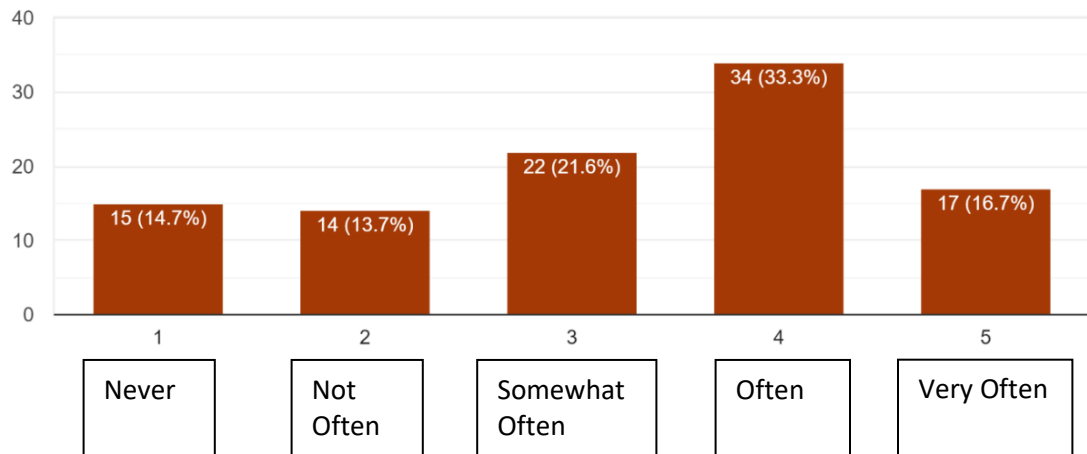
The next question of this survey attempts to answer one of the largest questions this thesis attempts to answer, have medical students ever observed barriers in treating diverse peoples-specifically Native peoples? These barriers can be cultural, differences in understandings of health, etc. My personal experience, outlined in Chapter 2, was a strong motivator to create this survey and my hypothesis was that medical students have seen barriers. When asking, **“Have you ever observed barriers between traditional**

Native approaches to health and Western, biomedical understandings of health?” a 5-point Likert scale was used (i.e. Never [1] to Very Often [5]). Out of all participants (n=103), the mean was 3.24 with a Standard Deviation of 1.69. The most chosen option was “Often [4]”. The least chosen option was “Not Often [2]”. Figure 7 shows a graphical representation of the results.

Figure 7

Have you ever observed barriers between traditional Native approaches to health and western, biomedical understandings of health?

102 responses



The findings of Figure 7 support the hypothesis that medical students observe barriers between traditional Native approaches to health and Western, biomedical understandings of health. Given that 50% of medical students either selected “Often [4]” or “Very Often [5]”, this indicates not only do barriers exist, but they are frequently observed by the medical students.

The final two questions of this survey perhaps are the most telling and helpful in terms of moving forward and altering/implementing new American Indian education elements into the curriculum. The last two questions were open-ended, optional questions that gave participants the opportunity to give their personal experiences and suggestions. The first of the two open-ended questions asked, **“If you have experienced barriers, in what ways have you experienced barriers between traditional Native approaches to health and Western, biomedical understandings of health?”** Table 4 outlines the responses of medical students who answered (n=41).

Table 4

Total Participants (n=41) (1) 1st Pillar Student , (2) 2nd Pillar Student , (3) 3rd Pillar Student

- 1) (1)I've seen conflicts between their view of traditional healing and the modern medicine/healthcare system.
- 2) (1)I participated in a journal club discussing adverse childhood events in Native children, and we also discussed some of the challenges faced by Natives in healthcare, such as lack of access, funding, different cultural practices, etc.
- 3) (1)I have not seen any barriers, but I don't really understand what this question is asking
- 4) (1)There is a lack of awareness regarding Native health and how to respectfully treat patients who don't have the same background.
- 5) (1)Misunderstanding and miscommunication between a physician and NA patients, particularly in the discussion of treatments and beliefs.
- 6) (1)There is a lack of understanding of their spiritual practices and non-traditional forms of healing.
- 7) (1)I think it is difficult for some people to understand traditional Native approaches just because they are different. Because of this, I believe there is a barrier because they don't understand their values or methods of healing.
- 8) (1)Eye contact; spiritual beliefs vs evolution (common barrier between religious affiliations or those without medical/biological foundational knowledge). Also, the higher incidence of certain diseases or chronic conditions in native populations, paired with limited (and complicated) distribution of resources and research opportunities, creates difficulty when determining the best way to help native patients. Physical separation of these resources (East vs West river) is also a barrier.
- 9) (1)I'm not sure your use of barrier in the above statement makes sense. They are different. No one will argue this. Certainly, each type of healthcare has value. Traditional practices may be more effective in some situations and western medicine may be more effective in others. The trick is perhaps utilizing the two methods of restoration in a joint effort for healing. As I am not trained in traditional healing practices, I would never attempt to prescribe such a treatment. That said I would also never condemn traditional healing methods and would be delighted to discuss them with a Native patient. I feel most physicians I have encountered would be similarly open to this discussion as well.

- 10) (1)There is a bit of a barrier between their willingness to answer questions and what is needed for treatment. There was a patient once who had participated in a ritual that was apparently not allowed anymore and she would not tell us about it so it made it harder to treat her.
- 11) (1)N/A
- 12) (1)I have not personally seen the barriers, but I am well aware that they exist
- 13) (2)Societal customs between Native Americans and Caucasians (e.g. eye contact) can sometimes be a barrier to the physician-patient interaction.
- 14) (2)Lack of understanding, lack of access, lack of faith in medicine, different beliefs
- 15) (2)Medication compliance
- 16) (2)Despite counseling, many members of this population fall prey to alcohol, tobacco, and/or methamphetamine abuse
- 17) (2)Familial structure and gender roles.
- 18) (2)The social idea of what is appropriate/acceptable is very different between the two cultures, especially in childbearing and family structure
- 19) (3)In some of my clinical experiences in Rapid City, we would have Native patients that were hesitant to proceed with certain procedures or to start taking certain medications because of their beliefs. Also, these encounters tended to be longer because patients would want to talk about their treatment options.
- 20) (3)On the reservation I was able to speak with a tribal healer and his view on medicine. I also attended a diversity dialogue on this topic. Both Native American speakers had been disrespected by physicians simply because they wanted to try safe herbal practices along with medical treatment.
- 21) (3)Communicating with patients in clinic
- 22) (3)I have not noticed barriers with regard to traditional vs western understandings of health. I do notice systemic barriers that exist on reservations.
- 23) (3)Distrust. Financial barriers
- 24) (3)Traditional healing practices and views on mental health, addictions more prevalent on the reservation
- 25) (3)Lack of understanding of the western medical system structure (referrals, specialists, etc.), Western providers' lack of understanding of traditional healing ceremonies, customs, etc.
- 26) (3)Limited access to care and poor understanding/background on western primary care and preventive health approaches
- 27) (3)Geographic, racial prejudice, health care fluency, socioeconomics
- 28) (3)Some distrust of Western medicine
- 29) (3)Sometimes it is difficult to know who is traditional in their beliefs and who is not, which makes interactions somewhat difficult. For instance, whether or not to look someone in the eyes when speaking to them.
- 30) (3)Their values and approach to medicine is such that they are reluctant to always accept treatment on first approach. This usually improves over time with the same provider, but that can change constantly with different providers at IHS facilities, which can complicate continuity of care.
- 31) (3)There is a strong amount of distrust in some Native American patients towards western medicine. Most providers seem to be tolerant of the differing of opinions between traditional vs western medicine, which I appreciated. I've seen patients in the ICU with sage (not burning obviously) and other health relics being supported by the providers.
- 32) (3)IHS and racism
- 33) (3)Lack of access to quality healthcare, indigenous beliefs of healing vs western healthcare, significant socioeconomic barriers like alcohol abuse, financial stress, etc
- 34) (3)Most barriers I have encountered are related to the difficulty in healthcare access on reservations
- 35) (3)They seem to approach medical decisions as a family effort, rather than one person being responsible for a decision about their health. This is just one example that I have seen in practice.

- 36) (3)poor health insurance
- 37) (3)Primarily in reference to view of surgical procedures and maintenance of chronic diseases
- 38) (3)Usually want a quick fix and may not follow treatment suggestions.
- 39) (3)Different cultural values.
- 40) (3)The management of chronic disease. Often native people's want to seek more natural based remedies. Resistance to long term medications.
- 41) (MD/PhD)I feel that there are resource barriers (AIHS vs Medicaid vs Sanford Hospital etc)

The final question of the survey was another open-ended question asking, **“How might the Sanford School of Medicine improve or enhance your ability to interact with and learn about Native peoples?”** This question gave participants the opportunity to speak generally, or specifically about what changes they would like to see. Table 5 outlines the responses of medical students who answered (n=64).

Table 5

Total Participants (n=64) (1) 1st Pillar Student , (2) 2nd Pillar Student , (3) 3rd Pillar Student

- 1) (1)I believe as part of clinical foundations dedicated lecture on their culture and beliefs could enhance. Maybe this education comes later in the curriculum closer to our clinical experience.
- 2) (1)Offering opportunities to volunteer which they already do.
- 3) (1)We had the opportunity to go out to Pierre to the boarding school for Native children. That was a helpful experience. I think it is difficult during Pillar 1 to incorporate a lot of patient contact and diversity opportunities. We have so much we have to learn during that time. It would probably be better to add in diversity during later Pillars where you actually get experience with different patients and can apply the material better.
- 4) (1)We had a required thing where we taught kids at a boarding school stuff about health. For a lot of our class that was their first time on a reservation. I can't think of anything that should be improved, we just treat them like everyone else ~_(\`)/_~
- 5) (1)It would be beneficial to tackle the problems of Native healthcare head on and actually discuss the deeply insidious issues of alcoholism, drug use, and sexual violence on the reservations. We seem to tiptoe around the issue and it is not benefiting us or Native peoples. Let's discuss the real issues openly and try to work together to solve them rather than sweep them under the rug and just learn about stories of people growing up on the reservations or tribal songs.
- 6) (1)It needs to be directly integrated into the curriculum. It can't be optional because we as physicians don't opt out of treatment diverse patients. There needs to be systemic integration of diversity into our lecture material (health risks for diverse populations) and into our clinical training. We went to Pierre for the PILC trip which was cool but they gave us no information about it. We don't know where those kids come from or why they are there. We don't talk about the different nations represented in South Dakota. For a school that prides itself on promoting Native access to higher education, the structured time for learning about these communities is severely limited.
- 7) (1)Bringing more speakers of NA descent, specifically from SD reservations, to educate us on what we should expect when providing care to NA populations, particularly the SD population of NA. It

just seems like there is a disconnect between a lot of our class and how life is out on SD Indian Reservations.

- 8) (1)We are almost a year into our training so far, and we have only had one required lunch lecture on Native American culture and health. Perhaps we will be exposed more later on, but up until now, the only options that have been offered have been the diversity dialogues. I am looking forward to doing the Native American cultural sensitivity training this Thursday, and am hoping to go out to Kyle at some point. Perhaps offering these sorts of opportunities earlier on in Pillar 1 could be helpful.
- 9) (1)Continue to provide opportunities (voluntary or mandatory) to interact with Native peoples. This can be clinical based or just volunteer/service opportunities.
- 10) (1)As a first year I'm not familiar with all of the opportunities to interact with native populations. Clinical experiences are already limited in the Pillar 1 curriculum, but I do believe that we get a relatively decent exposure to native populations for where we're at time-wise. There are opportunities to get more involved, but they cost money and precious time. It's difficult to 'add' clinical experiences when Pillar 1 (the most difficult and objectively important period of med school - Step 1 scores are still the highest valued factor when determining residency selection) is only 1.5 years - it was 2 years until a curriculum change some years back. Ways to enhance our interactions with native populations thus might be to invite willing natives for the clinical scenarios already scheduled, or to find a way to reduce costs (to zero) for the currently available opportunities. I find the latter unlikely. I will be going to Rapid for my Pillar 2 experience so I'm sure I'll have more opportunity for interaction than those in (at least) Sioux Falls. However, I think that outright 'adding' anything to Pillar 1 would negatively affect the curriculum.
- 11) (1)The opportunities available to students right now are more than one could experience in a years time. If students feel compelled / convinced of a future which involves Native healthcare, the opportunities are quite sufficient. This is honestly something I feel strongly about, and I think SSOM has well provided me the opportunities to begin my journey toward proficiency in the domain of Native American healthcare.
- 12) (1)As a Pillar 1 student, I think that the SSOM does as well as it can to incorporate education about other cultures including American Indians. There is so much information regarding the science and treatment aspects of medicine currently that the humanity of medicine is put aside until clinical experiences. There are opportunities to go to the reservation for experience as well as diversity dialogues. I'm not sure how much more they could feasibility include with our current curriculum.
- 13) (1)More clinic opportunities at the Coyote Clinic or similar.
- 14) (1)I haven't directly encountered a barrier, but I've wondered how best to approach any differences there might be. This is something I would greatly appreciate having a lesson directly on. The diversity training at USD is very minimal, and honestly quite disappointing. We have so much diversity just within this state, and it would be awesome to be able to use those resources to help us be more compassionate physicians in the future. This is a question I frequently struggle with because it is not minorities' responsibility to educate us on how to cross those cultural barriers, but at the same time, who better to be honest with the way things are. I think although there isn't a great "one size fits all" model for working with Native peoples, but we do need more clear guidelines or suggestions rather than vague answers like "oh, be mindful and read the situation." Let's talk about those barriers, and how Native peoples would prefer physicians go about helping them get any sort of treatment they need while also being respectful of their beliefs. I don't know if this can best be done by a panel or simply just more exposure and more opportunities to learn about the problems faced by Native patients. These lessons MUST be mandatory because this is not something we should get to choose if we learn. Everyone must learn about these lessons since we will all have patients who are considered minorities in many ways.
- 15) (1)More opportunities to visit reservations.

- 16) (1) In general, I feel that the school has failed to meet our mission to produce a culturally competent population of physicians. Much of our diversity training is provided in optional, lunchtime sessions. Thus, anyone who wants to "opt out" of becoming educated, can. I would change the SSOM in the following ways: First, the school should become actively involved in providing support (beginning in K-12) to AI students interested in the health professions. This active recruitment of AI students is vital to providing the best care for AI populations/increasing diversity of the workforce/general economic parity. Second, diversity training/cultural competency training should become a core part of our curriculum and should be required. Although I wish we didn't have to require the training for people to attend, this has turned out to be the case. The school should recognize that, in addition to preparing us for the technical aspects of board examinations, cultural training for our students is VITAL to preparing us to become ethical and just healthcare providers.
- 17) (1) Maybe bring in more diversity dialogue speakers. The first one we had about Native Americans was very fascinating.
- 18) (1) I think we could have more diversity dialogues throughout the year discussing the situation of Natives in the healthcare world. Another thing that could be done is setting aside time for more presentations during the Pierre trip (maybe while we are at the PILC) to discuss similar topics and to even visit areas around the reservations there.
- 19) (1) To actually have Native American patient interaction - having them in the Parry Center and practice history taking on them, to better understand the different social, cultural and economical background and how it can affect their condition and consequent treatment. Have physicians that frequently serve Native American population speak about their experiences, different approaches and advise of how to be culturally competent and effective with Native American patients.
- 20) (1) Immersion with people from those populations. Diversity Dialogues help get a sense of the problems they have but it's been hard to find answers how I can as a privileged, white man be of any help. I absolutely believe it's within the physicians scope to address the factors that could lead to detrimental health outcomes of my patients. In order to help prevent these things, do I need to help encourage community/spiritual/education programs? Am I in the wrong as someone ignorant and not from that culture to suggest that? Medical Students are problem solvers. Empathy and understanding can only go so far. We want to hear the patient, but also know how to help them.
- 21) (1) More opportunities to shadow on reservations or have additional clinical experiences
- 22) (1) More clinical experiences related to that particular population.
- 23) (1) Talks on treatment of these patients, from their viewpoint. This may include addressing their beliefs during treatment, and issues they face with modern healthcare and providers.
- 24) (2) Required service on a reservation
- 25) (2) More reservation opportunities probably. This was the best exposure I had during school so far (going to Kyle)
- 26) (2) I would have benefited from learning more about Native American customs during my coursework, and how they normally interact with physicians.
- 27) (2) Bring in more speakers or even Native people to talk to us about how to approach clinical visits, etc. Help us become more aware of obstacles we might face.
- 28) (2) Have standardized patients with Native Americans
- 29) (2) Give me less paperwork to worry about all the time
- 30) (2) Increase contact with these populations through more outreach clinics.
- 31) (2) Require students to visit reservations
- 32) (2) I think there should be a workshop in Pillar 1 to address the way Native peoples in the state view health with an introduction to Lakota language (esp. name pronunciation), IHS, and culture. It could even just be a day, but I think it would be incredibly helpful moving on to clinicals.
- 33) (3) I think the school is doing a good job with providing opportunities to learn about Native people. I think it's up to the student to take advantage of these opportunities.

- 34) (3)More immersive experience and required attendance at some/all diversity dialogues.
- 35) (3)SSOM spends a generous amount of resources to ensure that their students are well-equipped for effectively interacting with Native peoples in a culturally competent manner.
- 36) (3)Clinical experiences on the reservation or any experience on the reservation
- 37) (3)I think the new elective rotation is helpful. I also went to Pine Ridge during Pillar 1 which was a good learning experience. I think there should be a requirement for all students to spend time in an IHS facility.
- 38) (3)I was hesitant to travel to the reservation for cultural immersion week as I had already completed a short clinical experience with IHS. I think they should just mandate that everyone go to Pine Ridge for cultural immersion week. It sounds like every single one of my classmates there had a highly educational experience.
- 39) (3)Continue current practice
- 40) (3)Class elective
- 41) (3)Education from a Native American Medicine Man about traditional healing ceremonies, rituals, etc.
- 42) (3)I think SSOM has done a great job of exposing us to Native American Cultural opportunities. By taking advantage of some of these I feel that I have grown quite a bit.
- 43) (3)More formal education on the health care discrepancies and misconceptions with this underserved portion of the population
- 44) (3)Understand native American healthcare economics and resources
- 45) (3)Larger focus on this underserved population during clinical coursework; further instruction about the IHS system and its interactions with outside healthcare facilities; Better recruitment efforts to draw in Native peoples into medicine
- 46) (3)The reservation based Core clerkship I took was an elective and I also chose to do a diversity experience on a reservation. I don't believe these need to be required rotations, but I think they are great opportunities for students who are interested in learning more about Native American health care. I have found the lecture-based diversity dialogues and other diversity lectures to be less helpful.
- 47) (3)I believe that the school does a good job at promoting diversity in medicine. Perhaps more classes on cultural awareness would be of benefit.
- 48) (3)I completed Pillar 2 in the FARM Program where I was placed in Mobridge, which is adjacent to the Standing Rock Reservation. I worked with many Native American patients as well as employees/community members. I do feel that this gave me extra insight into the culture that my classmates at the larger campuses are unlikely to have gotten. There is an optional experience to visit Kyle, SD during Pillar 1, and I almost think this should be required similar to Cultural Colloquium week. The Diversity Dialogues are quite good, but not enough. The INMED program admits students of Native American descent to the medical school. I'm not sure if this already exists, but perhaps we could expand a program like this to include more medical fields (i.e. nursing, dental hygiene, PT, OT, etc).
- 49) (3)More clinical experiences on the reservations
- 50) (3)More rotations and exposure to Native American healthcare throughout the clinical curriculum.
- 51) (3)Offer more clinical opportunities on reservations
- 52) (3)More opportunities for 2 to 4 week clinical experiences.
- 53) (3)Continue to offer interaction at the reservations. The new FAMP rotation at Eagle Butte (I think?) is a fantastic start. Perhaps another lecture on the difference between traditional Native American values compared to modern western values prior to reservation trips.
- 54) (3)Continue rotations and diversity dialogues
- 55) (3)Provide elective course(s) to further study Native American health culture and it's current relationship with Western medicine

- 56) (3)I think the Rapid City campus provides great opportunities for interaction with Native American people, both in the inpatient setting and the outpatient. We have also had a lecture about Native Americans and their different approaches to health care. I think information like this is vital to increasing understanding of cultural differences.
- 57) (3)continue cultural immersion opportunities at Pine Ridge, Rosebud. opportunities for pillar 3 electives on the reservation
- 58) (3)Specific lecture about differences in health care views
- 59) (3)They do a good job, just more interaction helps.
- 60) (3)I think they do a great job.
- 61) (3)I had a great experience and learned alot however I did have to seek those opportunities out due to my personal interest. Had I not been interested it would've been possible to avoid learning anything.
- 62) (3)SSOM is doing a very good job in facilitating discussion through programs such as Diversity Dialogues and guest speakers. I think some increased integration of American Indian speakers into panels or programs focused on investigating the intersection of AI culture and western healthcare could be useful.
- 63) (3)Increased lectures from guest speakers, rotation on a reservation or at a clinical site that frequently serves Native patients.
- 64) (3)Clinical clerkships available on reservations

There is certainly a spectrum of responses to this final question. I was very fortunate that 62.1% (n=64) of medical students who completed this survey took the time to give feedback on their personal recommendations. I was also pleased to see that many students took the time to craft thorough, in-depth, responses. In the next chapter, we will talk through the results and what exactly we can take away from the survey.

CHAPTER EIGHT

Discussion

The education of future physicians begins with their undergraduate studies and continues through their medical school education and residency training. Through their studies, students develop the foundational knowledge and skills to prepare for residency and their practice. Being scientifically knowledgeable and clinically intelligent are not enough to provide sufficient care for patients. A healthcare provider must be culturally sensitive and aware of the social, cultural, and economic perspectives that influence a patient's well-being. Therefore, it is important to teach undergraduate pre-health students and especially medical students about such perspectives to create positive and empathetic patient encounters. As important as it is to teach medical students about the technical aspects of medicine, it is equally important to educate students on interpersonal and communication skills to allow for building strong doctor-patient relationships and establish trust. This survey conducted at the University of South Dakota Sanford School of Medicine evaluated the education of medical students regarding Native peoples and attempted to gauge their experiences interacting with Native populations. Furthermore, this survey aimed to get feedback from medical students on their diversity training during medical school.

The results of the survey demonstrate that SSOM medical students are becoming more informed about Native peoples and populations as they enter medical school at the Sanford School of Medicine. The mean when asking medical students, **“Prior to attending Medical School, how informed do you feel you were regarding American**

Indians?” was 2.86 out of 5 (See Figure 1). When asking medical students, **“During Medical School, how informed do you feel you are regarding American Indians?”**, the mean was 3.57 out of 5 (See Figure 3). This is promising as the mean increased 0.71 from undergrad to medical school. There is certainly room for growth however as there were several students who endorsed the same (n=40) or lower scores (n=6) when comparing pre-medical to medical school exposure to Native Americans.

Another promising outcome of the survey was medical students’ interest in working with American Indian communities and populations on reservations in the future. The mean score when asking, **“In the future, how likely would you be to interact with American Indian communities?”** was 4.04 out of 5 (See Figure 5). The mean score when asking, **“In the future, how likely would you be to interact with populations on Reservations?”** was 3.40 out of 5 (See Figure 6). Although it is hard to exactly say this interest in working with Native populations is due to a students’ exposure during medical school, it is promising to see interest in wanting to work with Native communities and populations on reservations in the future.

One major finding of this survey was that there seems to be very apparent barriers relative to perspectives of health between traditional Native approaches and Western, biomedical understandings of health. When asking medical students if they have ever observed such barriers, 70.8% selected Somewhat Often [3], Often [4], or Very Often [5]. The mean score for this question was 3.24 out of 5 (See Figure 7). Although these results seem to indicate that there are definite barriers in understandings of health, I wonder what the results would have looked like if I asked about barriers more broadly including but not limited to social barriers, economic barriers, etc. Perhaps the mean

would be even higher? Furthermore, I wonder if the results would be even higher if I asked veteran physicians who have practiced for many years to answer this question. Personally, it surprised me that even medical students have observed such barriers so early on in their professional careers.

Perhaps the most meaningful results of the survey came from the short-answer responses given by medical students in the final two questions. Medical students' responses give meaningful insight into what exactly is being taught about Native peoples and what opportunities are offered. Current medical students' feedback is essential to invoke curriculum changes (if needed) and inspire future medical classes to be culturally sensitive.

With so many incredibly informative responses on the two open-ended survey questions, I had a hard time initially deciding how to discuss these findings. I thought a good way of representing the overall consensus of the medical students was to create a "Word Cloud" for the final two questions. A word cloud is "an image composed of words used in a particular text or subject, in which the size of each word indicates the frequency or importance" (Lepki, 2016). Figure 8 below is a word cloud for the question: **"If you have experienced barriers, in what ways have you experienced barriers between traditional Native approaches to health and western, biomedical understandings of health?" (n=41).**

was not the case. The frequency in the word “Lack” came from the following phrases “Lack of understanding” (n=6), “Lack of access” (n=5), “Lack of faith in medicine” (n=3), and “Lack of awareness” (n=1). Despite the word “Lack” only being present nine times, there are fifteen phrases counted because many responses had a format of “Lack of understanding, access, faith in medicine, etc.” In the next Chapter, Chapter 9: Next Steps and Moving Forward, we will talk about how to proceed knowing such prominent barriers exist.

One of the main hypotheses tested in this thesis was the belief that medical students at the University of South Dakota Sanford School of Medicine lack opportunities to learn about Native communities. From the results of this survey, it appears that this hypothesis is true. The responses to the final question of this survey, Question 14, were worded quite passionately. I did not anticipate having responses from current medical students as strongly worded as they were. Before we take a look at some specific student responses, let’s look at the word cloud for Question 14 of the survey. Figure 9 below is the word cloud for the question: **“How might the Sanford School of Medicine improve or enhance your ability to interact with and learn about Native peoples?” (n=64).**

After analyzing these results, it is clear to me that medical students want more opportunities to interact with Native communities and populations on reservations. 52 of the 64 responses to this question explicitly said or suggested that more diversity training on Native peoples should be implemented into their medical education. Most medical students mentioned increasing the opportunities; however, several explicitly mentioned directly integrating this training into their curriculum and requiring all students to have these experiences. I would like to highlight a few specific quotes from medical students' responses to show this. A Pillar 3 medical student wrote, "I had a great experience and learned a lot; however, I did have to seek those opportunities out due to my personal interest. Had I not been interested it would've been possible to avoid learning anything". A Pillar 1 medical student writes,

It needs to be directly integrated into the curriculum. It can't be optional because we as physicians don't opt out of treatment [treating] diverse patients. There needs to be systemic integration of diversity into our lecture material (health risks for diverse populations) and into our clinical training. We went to Pierre for the PILK trip which was cool, but they gave us no information about it. We don't know where those kids come from or why there are there. We don't talk about the different nations represented in South Dakota. For a school that prides itself on promoting Native access to higher education, the structured time for learning about these communities is severely limited.

This quote is quite powerful. I found it especially powerful when the medical student mentioned that physicians do not opt-out of treating diverse patients. This point

goes along with what the Pillar 3 student said earlier. Despite having many opportunities for students to interact with Native communities, perhaps these experiences warrant being mandatory. Another Pillar 1 student further speaks to the idea of “opting-out” of diversity training,

In general, I feel that the school has failed to meet our mission to produce a culturally competent population of physicians. Much of our diversity training is provided in optional, lunchtime sessions. Thus, anyone who wants to "opt out" of becoming educated, can. I would change the SSOM in the following ways: First, the school should become actively involved in providing support (beginning in K-12) to AI students interested in the health professions. This active recruitment of AI students is vital to providing the best care for AI populations/increasing diversity of the workforce/general economic parity. Second, diversity training/cultural competency training should become a core part of our curriculum and should be required. Although I wish we didn't have to require the training for people to attend, this has turned out to be the case. The school should recognize that, in addition to preparing us for the technical aspects of board examinations, cultural training for our students is VITAL to preparing us to become ethical and just healthcare providers.

From this quote, and other responses from the survey, it is clear to me that the Sanford School of Medicine needs to change something. When medical students are speaking this passionately about their displeasure with the diversity training/cultural competency training, there is something wrong.

The results of the survey demonstrate that medical students lack strong exposure and opportunities to interact with Native communities and populations on reservations. Many participants recognized that the Sanford School of Medicine does provide some opportunities; however, they are limited. The general consensus from the participants was that the SSOM should not only increase the number of experiences for medical students to interact with Native communities, but certain experiences should be mandatory. The results of the survey also demonstrate that medical students acknowledge that there are barriers between traditional Native approaches to health and Western, biomedical understanding of health. The medical students' responses pointed to how increased exposure can establish understanding and trust between physicians and their Native patients. Training that teaches medical students to recognize social/cultural barriers and establish communication skills with persons of different backgrounds may be beneficial to include in medical school curriculum. Thereby, ensuring qualities of cultural sensitivity and non-judgement are carried into future medical classes. In the next chapter, we will discuss how to move forward with the results of the survey.

CHAPTER NINE

Next Steps and Moving Forward

Now that we have presented the results and discussed the findings of the survey, the next steps, in my mind, are to show the SSOM the results and feedback from their medical students. Before I could reach out to any school of medicine faculty, I was incredibly excited to receive an email from Dr. Mark Beard, Dean of Medical Student Education at the Sanford School of Medicine. On March 6, 2019, Dr. Beard reached out to me about my thesis. He said,

...I had the opportunity to meet with a cohort of students interested in ways we can enhance and improve on our cultural sensitivity curriculum at the medical school and they informed me that you were running this survey for your honors thesis. I am interested in possibly meeting to discuss the findings of your survey and any conclusions/recommendations you might have. [Beard 2019 Honors Thesis Survey]

Upon receiving this email, I couldn't help but be incredibly excited. Although I had never met Dr. Beard, I thought this email was an incredible opportunity for me to talk to him about my results and the medical students' feedback. I met with Dr. Beard on March 8, 2019, at his office in Sioux Falls. It was humbling to have the opportunity to discuss relationships between Natives and non-Natives and integrating diversity and cultural sensitivity into the curriculum of the SSOM. Much of our conversation revolved around the open-ended responses on questions 13 and 14 of the survey. Dr. Beard did seem quite shocked by how strongly worded the responses were and agreed that cultural

sensitivity training is essential to becoming a well-rounded physician. I asked Dr. Beard “Is it possible for a Medical Student at the SSOM to go all four years of medical school without interacting with a Native person?” Dr. Beard’s response was “It is highly unlikely that a medical student will go all four years without interacting with a Native individual; however, it is possible.”

Dr. Beard and I spoke about how there are a multitude of opportunities to interact with Native communities and reservations in medical school at the SSOM; however, it was mostly up to the student to take advantage of these experiences. I used the medical students’ responses to showcase how the school of medicine should require some experiences and trainings. A few quotes I used from medical students were “diversity training/cultural competency training should become a core part of our curriculum and should be required. Although I wish we didn't have to require the training for people to attend, this has turned out to be the case. The school should recognize that, in addition to preparing us for the technical aspects of board examinations, cultural training for our students is VITAL to preparing us to become ethical and just healthcare providers.” (Pillar 1 Student), “These lessons MUST be mandatory because this is not something we should get to choose if we learn. Everyone must learn about these lessons since we will all have patients who are considered minorities in many ways.” (Pillar 1 Student), and “I think there should be a workshop in Pillar 1 to address the way Native peoples in the state view health with an introduction to Lakota language (esp. name pronunciation), IHS, and culture. It could even just be a day, but I think it would be incredibly helpful moving on to clinicals” (Pillar 2 Student).

Shortly after this meeting with Dr. Beard, I received another email from him saying, “I wanted to request your permission to present some of your preliminary comments and data to our Medical Education Committee this week. Please let me know if you would be okay with this and I will follow back with you and let you know what the committee says about your findings” (Beard 2019 Follow-Up). I sent an email back saying that it was OK and that I was absolutely thrilled and very excited to hear the committee’s thoughts. In April, I heard from Dr. Yutrzenka, Associate Dean of Diversity and Inclusion (Personal Communication), that my thesis and its results were mentioned at a recent SSOM leadership meeting. I was even told by Dr. Yutrzenka that Dr. Mary Nettleman, Dean of the Sanford School of Medicine, was very impressed by my thesis and its findings.

I am incredibly grateful that my thesis has received such attention and may help to inspire change at the medical school. Moving forward, I think the SSOM will continue to integrate diversity and cultural sensitivity training into their curriculum. From Dr. Beard’s interest and Dr. Nettleman’s comments, I believe the SSOM truly values their medical students’ feedback and will try to incorporate some of the comments from participants in the survey.

It is crucial that physicians are culturally sensitive and understand how to interact with patients who come from a variety of backgrounds. Implementing diversity training can establish strong doctor-patient relationships and create effective treatment plans. These foundational skills are built and practiced during a students’ medical education. The survey conducted for this thesis revealed that barriers are present between traditional Native approaches to health and Western, biomedical understandings of health.

Furthermore, the survey conducted revealed that medical students at the SSOM lack some opportunities to interact with Native communities and populations on reservations. By increasing medical student exposure to health disparities and educating them on cultural sensitivity training, medical students will be better equipped to serve patients of all backgrounds.

CHAPTER TEN

Conclusion

In this thesis I started by introducing the topic and telling my personal experience that motivated me to conduct the survey. Then, I presented data on the multitude of disparities present in Native communities. Following this, I presented what the current opportunities and experiences were to interact with Native peoples and populations on reservations at the SSOM. The next sections after this outlined the rationale, methods, and results of the survey.

My goal with this thesis was to increase the educational importance the Sanford School of Medicine places on the culture of all groups, especially, Native peoples. Further, my goal was to increase medical student exposure to Native communities, increase medical student feedback, and ultimately decrease the prominent health disparities among Native communities here in South Dakota. My hope is that the results of this thesis inspire change and promote the importance of educating future physicians to not only be scientifically knowledgeable, but culturally sensitive and confident to build relationships, establish trust, and treat those of all backgrounds fairly and equally.

Future studies and surveys should be conducted to get feedback on the implemented changes and incorporate those comments in a plan to move forward.

Appendices

Appendix A IRB Approval



February 25, 2019

The University of South Dakota
414 E. Clark Street
Vermillion, SD 57069

PI: David Posthumus **Student PI:** Benjamin Jacobs
Project: 2019.014 - Health Care and Plains Native Americans: Towards a Culturally Competent Medical School Curriculum
Review Level: Exempt 2 **Risk:** No More than Minimal Risk
USD IRB Initial Approval: 2/25/2019
Approved items associated with your project:
Survey
Consent Statement (attached)
Advertisement
Permissions

The proposal referenced above has received an Exempt review and approval via the procedures of the University of South Dakota Institutional Review Board.

Annual Continuing Review is not required for the above Exempt study. However, when this study is completed you must submit a Closure Form to the IRB. You may close your study when you no longer have contact with the subjects and you are finished collecting data. You may continue to analyze the existing data on your closed project.

Prior to initiation, promptly report to the IRB, any proposed changes or additions (e.g., protocol amendments/revised informed consents/ site changes, etc.) in previously approved human subject research activities.

The forms to assist you in filing your: project closure, continuation, adverse/unanticipated event, project updates /amendments, etc. can be accessed at <http://www.usd.edu/research/irb-application-forms>

If you have any questions, please contact: humansubjects@usd.edu or (605) 677-6184.

Sincerely,

A handwritten signature in cursive script that reads 'Ann Waterbury'.

Ann Waterbury, M.B.A.
Director, Office of Human Subjects
University of South Dakota
(605) 677-6067

Appendix B

Student Survey Informed Consent Statement

IRB Approval effective from: 2/25/2019
USD IRB

Student Survey Informed Consent Statement

UNIVERSITY OF SOUTH DAKOTA
Institutional Review Board

Informed Consent Statement

Title of Project: Health Care and Plains Native Americans: Towards a Culturally Competent Medical School Curriculum

Principle Investigator: David Posthumus, 309 East Hall, Vermillion, SD 57069
(605) 677-5402 David.Posthumus@usd.edu

Other Investigators: Benjamin Jacobs, 120 Old Main, Vermillion, SD 57069

Purpose of the Study:

The literature review will focus on how diversity education impacts medical students in their shadowing, volunteering, and participation in clinical rotations. The survey portion of the study will evaluate what education medical students at the Sanford School of Medicine have received and how it has impacted their communication and experiences when interacting and treating patients.

Procedures to be followed:

You will be asked to answer 14 questions on a survey. The questions will come in three formats; scale, multiple choice, and free response. The questions in the scale format will present a series of statements and you will need to indicate to what extent you agree using a five-point scale. Multiple choice questions will provide a number of choices and you will need to select the best or best answer, a combination of answers, or indicate an option that was not included. Finally, free response questions will consist of a prompt with space to record your answer.

Risks:

None of the questions should cause discomfort; however, if you would like to talk to someone about your feeling regarding this study, you are encouraged to contact the University of South Dakota's Student Counseling Center at 605-677-5777 which provides counselling service to USD student at no charge.

Benefits:

You may not benefit personally from participating in this research project, however:

- You may learn more about yourself by participating in this study
- You may give your opinion and thoughts on educational programs you are enrolled in
- The information collected may help to inform others about educational diversity and enhance their ability to interact and learn about communities of diverse cultures

Duration:

It will take approximately 5 minutes or less to complete the questions.

Statement of Confidentiality:

The survey does not ask for any information that would identify who the response belong to, such as your name or student ID number. If this research is published, no information that would identify you will be included since your name is in no way linked to your responses.

All survey responses received will be treated confidentially and stored on a secure server. However, given that the surveys can be completed from any computer (e.g. personal, work, school), we are unable to guarantee the security of the computer on which you choose to enter your responses. As a participant in our study, we want you to be aware that certain

IRB Approval effective from: 2/25/2019
USD IRB

“key logging” software programs exist that can be used to track or capture data that you enter and/or websites that you visit.

Risks to Ask Questions:

The researchers conducting this study are David Posthumus and Benjamin Jacobs. You may ask any questions you have now. If you later have questions, concerns, or complaints about our research please contact David Posthumus at (605)-677-5402 during the day.

If you have questions regarding your rights as a research subject, you may contact The University of South Dakota- Office of Human Subjects Protection at (605) 677-6184. You may also call this number with problems, complaints, or concerns about the research. Please call this number if you cannot reach research staff, or you wish to talk with someone who is an informed individual who is independent of the research team.

Compensation:

You will not receive compensation for your participation

Voluntary Participation:

You do not have to participate in this research. You can stop your participation at any time. You may refuse to participate or choose to discontinue participation at any time without losing any benefits to which you are otherwise entitled.

You do not have to answer any questions you do not want to answer.

For this study, you must be 18 years of age or older to consent to participate in this research study.

Completion of the survey implies that you have read the information in this form and consent to participate in the research.

Please print or save a copy of this form for your record or future reference.

Appendix C
Medical Student Survey

MEDICAL STUDENT SURVEY

1. Med School Pillar?
 - a. Pillar 1
 - b. Pillar 2
 - c. Pillar 3
 - d. Other (Please Explain)
2. Gender?
 - a. Male
 - b. Female
 - c. Non-Binary
 - d. Prefer not to answer
3. Self-Identification?
 - a. White
 - b. Hispanic, Latino, or of Spanish Origin
 - c. Black or African American
 - d. American Indian or Alaska Native
 - e. Asian
 - f. Native Hawaiian or Other Pacific Islander
 - g. Other (Please Explain)
4. What state did you receive most of your primary education in? (K-12)
 - a. [Entry]
5. Where did you obtain your Undergraduate Degree? (College/University)
 - a. [Entry]
6. Prior to attending Medical School, how informed do you feel you were regarding American Indians?
 - a. Uninformed [1]
 - b. Not Well Informed [2]
 - c. Somewhat Informed [3]
 - d. Well Informed [4]
 - e. Very Well Informed [5]
7. Prior to attending Medical School, in what ways have you become informed regarding American Indians? (Select all that Apply)
 - a. High School Coursework
 - b. College Coursework
 - c. Media / Hollywood
 - d. Volunteering / Community Service
 - e. Employment / Work
 - f. American Indian Heritage
 - g. Family
 - h. Friends / Acquaintances
 - i. None of the Above
 - j. Other (Please Explain)

8. During Medical School, how informed do you feel you were regarding American Indians?
 - a. Uninformed [1]
 - b. Not Well Informed [2]
 - c. Somewhat Informed [3]
 - d. Well Informed [4]
 - e. Very Well Informed [5]
9. During Medical School, in what ways have you become informed regarding American Indians? Select all that Apply)
 - a. Coursework
 - b. Media / Hollywood
 - c. Clinical Experiences
 - d. Volunteering / Community Service
 - e. Reservation based Clinical Clerkship
 - f. Diversity Dialogues
 - g. Opportunities to visit Reservations
 - h. Cultural Diversity Week
 - i. Coyote Clinic / Servants Heart
 - j. American Indian Heritage
 - k. Family
 - l. Friends / Acquaintances
 - m. None of the Above
 - n. Other (Please Explain)
10. In the future, how likely would you be to interact with American Indian Communities?
 - a. Very Likely [1]
 - b. Unlikely [2]
 - c. Somewhat Likely [3]
 - d. Likely [4]
 - e. Very Likely [5]
11. In the future, how likely would you be to interact with populations on Reservations?
 - a. Very Likely [1]
 - b. Unlikely [2]
 - c. Somewhat Likely [3]
 - d. Likely [4]
 - e. Very Likely [5]
12. Have you ever observed barriers between traditional Native approaches to health and western, biomedical understanding of health?
 - a. Never [1]
 - b. Not Often [2]
 - c. Somewhat Often [3]
 - d. Often [4]
 - e. Very Often [5]

13. If you have experienced barriers, in what ways have you experienced barriers between traditional Native approaches to health and western, biomedical understandings of health?
 - a. [Free Response]
14. How might the Sanford School of Medicine improve or enhance your ability to interact with and learn about Native peoples?
 - a. [Free Response]

Works Cited

- Beard, Mark. "Re: Follow-Up." Received by Benjamin Jacobs, 13 March. 2019.
- Beard, Mark. "Honors Thesis Survey." Received by Benjamin Jacobs, 6 March. 2019.
- Health People. "Health Disparities Data." [healthypeople.gov](https://www.healthypeople.gov/2020/data-search/health-disparities-data). 2014. Web 4 Mar.2020.
<https://www.healthypeople.gov/2020/data-search/health-disparities-data>
- Indian Health Service. "Disparities Fact Sheets." [ihs.gov](https://www.ihs.gov/newsroom/factsheets/disparities/). 2011. Web. 28 Jan. 2020.
<https://www.ihs.gov/newsroom/factsheets/disparities/>
- Kosoko-Lasaki, Sade, et al. *Cultural Proficiency in Addressing Health Disparities*. Jones and Bartlett Publishers, 2009.
- Lepki, Lisa. "What the Heck is a Word Cloud and Why Would I use One?" *ProWritingAid*, 12 December 2016, <https://prowritingaid.com/art/425/What-the-Heck-is-a-Word-Cloud-and-Why-Would-I-Use-One.aspx>
- Nash, DA, Nagel, RJ. Confronting Oral Health Disparities Among American Indian/Alaska Native Children: The Pediatric Oral Health Therapist. *Am J Public Health*. 2005;95:1325-1329.
- Spector, Rachel E. *Cultural Diversity in Health and Illness*. Pearson, 2017.
- United States Census Bureau. "Population Estimates." [census.gov](https://www.census.gov/quickfacts/geo/chart/SD/RHI325218). 2018. Web. 28 Jan. 2020. <https://www.census.gov/quickfacts/geo/chart/SD/RHI325218>
- University of South Dakota. "SSOM Diversity Programs." [usd.edu](https://www.usd.edu/medicine/ssom-diversity-programs). 2019. Web. 3 Mar. 2020. <https://www.usd.edu/medicine/ssom-diversity-programs>
- University of South Dakota. "Coyote Clinic." [usd.edu](https://www.usd.edu/medicine/coyote-clinic). 2019. Web. 3 Mar. 2020. <https://www.usd.edu/medicine/coyote-clinic>