HOD ACTION: Council on Medical Education Report 5 adopted and the remainder of the report filed.

REPORT OF THE COUNCIL ON MEDICAL EDUCATION

CME Report 5-A-18

Subject: Study of Declining Native American Medical Student Enrollment

Presented by: Lynne Kirk, MD, Chair

American Medical Association (AMA) Policy D-200.985 (5), "Strategies for Enhancing Diversity in the Physician Workforce," reads as follows:

> 5. Our AMA will partner with key stakeholders (including but not limited to the Association of American Medical Colleges, Association of American Indian Physicians, Association of Native American Medical Students, We Are Healers, and the Indian Health Service) to study and report back by July 2018 on why enrollment in medical school for Native Americans is declining in spite of an overall substantial increase in medical school enrollment, and lastly to propose remedies to solve the problems identified in the AMA study.

This section of the policy was appended through Resolution 313-A-17, "Study of Declining Native American Medical Student Enrollment," which was introduced by the AMA Minority Affairs Section at the 2017 Annual Meeting of the AMA House of Delegates (HOD).

Testimony before Reference Committee C during the meeting reflected limited but supportive testimony on this item focused on the need for increased diversity of the physician workforce to support access to patient care among underserved populations. It was noted that existing AMA policy on diversity dovetails with the intent of this resolution, and that the decline in the number of Native Americans entering medical school is worrisome and may hold future negative ramifications for access to care. Accordingly, Reference Committee C recommended adoption of Resolution 313 to the HOD, and the HOD accepted this recommendation. This report is in response to this policy.

BACKGROUND

The concern regarding Native American student enrollment and the Native American physician workforce is supported by Native American population health outcomes data, Native American health care accessibility data, student enrollment data, workforce data, and the quest for a culturally diverse and culturally competent physician workforce able to meet the health care needs of people from all ethnic backgrounds. The estimated 5.2 million American Indians and Alaska Natives (AI/ANs) living in the U.S. have long experienced lower health status when compared with other Americans. Between 1999 and 2014, premature mortality rates increased for AI/AN populations, while decreasing for blacks, Hispanics, Asians, and Pacific Islanders during the same period. The rates are particularly high for young adult AI/AN individuals. Lack of access to health care and mental health resources is believed to be a causative factor.[1] Lower life expectancy and a disproportionate disease burden exist for a variety of reasons, including inadequate education, lack of economic development and investment, disproportionate poverty, discrimination in the delivery of health services, and cultural differences. These are broad quality of life issues rooted in economic adversity and poor social conditions. Diseases of the heart, malignant neoplasm, unintentional injuries, and diabetes are leading causes of AI/AN deaths (2008-2010). AI/AN

individuals born today have a life expectancy 4.4 years shorter than the U.S. population as a whole[2] and seven years shorter than non-Hispanic whites.[3] In a 2016 U.S. Government Accountability Office report to Congress, difficulties in filling health care provider vacancies and long wait times for primary care appointments were noted to be contributing factors to the health care disparities facing AI/ANs.[4] A survey by the Harvard School of Public Health found that 23% of AI/ANs surveyed experienced discrimination when seeking health care, and 15% avoided seeking healthcare for themselves or their family because of concern that they would be discriminated against.[5]

The Indian Health Service (IHS), an agency within the U.S. Department of Health and Human Services, states there is "ample opportunity—and pressing need—for physicians practicing a wide range of specializations." The IHS website lists numerous job openings across multiple medical specialties and geographic locations.[6] Federal law requires that absolute preference be given to AI/AN applicants. Out of the total active MD workforce (approximately 850,000) in the U.S., 0.4% (3,400) are self-identified as AI/AN.[7]

In addition to the positive impact on the educational environment through, for example—(1) cultural competence in care delivery; (2) intellectual benefits; and (3) interpersonal benefits for patients, learners and faculty[8]— increasing AI/AN medical school enrollment would translate into an increase in the AI/AN physician workforce. A workforce increase of this nature could positively impact AI/AN population health and improve access to physician services. A report from the Health Resources and Services Administration on physician workforce characteristics found that minority physicians have a greater propensity to practice in physician shortage areas (although the report did not specifically address AI/AN physicians or the AI/AN population).[9] Another review on this subject concluded that underrepresented minority health professionals have been consistently more likely to deliver health care to the underserved; this study did include AI/AN providers but did not specifically address AI/AN physicians in the findings or conclusions.[10] There are few conclusive data demonstrating that increasing the number of AI/AN medical students (and ultimately AI/AN physicians) would result in increased numbers of physicians who serve AI/AN communities. A literature search uncovered only one study, published in 1989, which concluded that most AI/AN physicians, while residing in areas with significant AI/AN populations, were primarily serving non-AI/AN patient populations.[11] Collecting data on AI/AN physician practice patterns has proven difficult for a number of reasons, including the organization of providers to serve AI/AN needs. The Indian Self Determination and Education Assistance Act, also known as Public Law 93-638, allows the IHS to provide funds directly to tribes for administration and delivery of health services.[12] An unintended consequence of this law has been to make collection of provider data difficult. A comprehensive study is currently underway to determine the practice setting and populations served by AI/AN physicians (personal communication with the study author, Siobhan Wescott, February 22, 2018).

When considering the available information on this topic, it is important to note that most data on AI/AN medical student enrollment and the physician workforce rely on an individual's self-identification as American Indian, Native American, or Alaska Native. There is no established definition of AI/AN. The U.S. government relies on each of the 567 recognized tribes to set the standards for inclusion as a member of the tribe and official status of AI/AN or Native American.[13] Inconsistency in criteria for recognition of AI/AN status may result in inaccuracies and inconsistencies in data. Some data sources also allow individuals to self-identify as "multiple race/ethnicity," which may lead to underreporting of AI/AN data.

MEDICAL SCHOOL ENROLLMENT OF AI/AN STUDENTS

Among the ethnic groups traditionally considered to be underrepresented in medicine, AI/AN ethnicity is the least represented among U.S. allopathic medical students. Data from the Association of American Medical Colleges (AAMC) show that in 2016 a total of 20 schools reported at least one applicant who self-identified as AI/AN. The percentage of AI/AN applicants to these schools ranged from 0.9% to 3.8% of the total applicant pool. AAMC enrollment data for academic year 2016-17 show that 223 students, or 0.25% of the total allopathic medical school enrollees, self-identified as AI/AN. The majority of these students were enrolled in medical schools in Oklahoma (20), New Mexico (17), Minnesota (17), Texas (16), North Dakota (15), and Arizona (10). For the allopathic medical school graduating class of 2016, 31 individuals, or 0.16%, self-identified as AI/AN.[14] Since 2002, the number of AI/AN applicants and matriculants to allopathic medical schools has been relatively consistent, despite the increase in the overall number of applicants and enrollees.

Data for osteopathic medical schools show that in 2016, a total of 51 applicants, or 0.3%, self-identified as AI/AN. Over the last 15 years, the number of AI/AN applicants to osteopathic schools has remained relatively constant (between 38 to 69 annually). Nine AI/AN students, or 0.1% of the total enrollee pool, matriculated into osteopathic schools in 2016. Data were not available for AI/AN enrollment in individual osteopathic medical schools in 2016, but the greatest numbers of applications were to schools located in Arizona (31), Pennsylvania (32) and Oklahoma (29).[15] These data likely include students who applied to multiple programs.

Data regarding allopathic and osteopathic AI/AN applicants and enrollment are shown in the table at the end of this report. There are no data on the number of AI/AN applicants who applied to both allopathic and osteopathic programs. Of note, while both the Liaison Committee on Medical Education and the Commission on Osteopathic College Accreditation have standards requiring medical schools to achieve diversity in enrollment, the standards do not specify what groups the schools must include in their respective definitions of diversity and efforts to achieve diversity outcomes.[16 17]

Although the absolute numbers of applicants and matriculants, albeit small, have remained relatively constant over the last 15 years, the growth in total medical school applications and enrollment has resulted in a declining percentage of AI/AN applicants and matriculating students. This has occurred despite the emphasis on increasing diversity in matriculants to medical school and the physician workforce; an acceptance rate for AI/AN (44.9%) that exceeds all other racial and ethnic groups, including whites; and increases in the applicant and matriculation rates for other groups traditionally identified as underrepresented in medicine.[18] These data indicate that efforts to recruit AI/AN students to enter health professions education are inadequate.

MEDICAL SCHOOL AND HEALTH PROFESSIONS PROGRAMS TO SUPPORT AI/AN ENTRY INTO HEALTH CARE CAREERS

The relative decline in AI/AN applicants and matriculants has occurred despite focused efforts by institutions in states with large AI/AN populations. Several medical schools, alone or in collaboration with other schools, have implemented programs to encourage and support AI/AN students into the health professions.

For example, the North Dakota School of Medicine and Health Sciences has developed the Indians Into Medicine Program (INMED™), a comprehensive program designed to assist American Indian students who aspire to be health professionals and to meet the needs of tribal communities.

Established in 1973, the program aims to address three major problems: 1) too few health professionals in AI communities, 2) too few AI health professionals, and 3) the substandard level of health and health care in AI communities. INMED support services include academic and personal counseling for students, assistance with financial aid applications, and summer enrichment sessions at the junior high through professional school levels. Each year, more than 100 AI students attend INMED's annual summer enrichment sessions at the junior high, high school, and medical preparatory levels. These summer programs bolster participants' math and science backgrounds and introduce them to health careers.[19]

The state of Oklahoma is home to two medical schools as well as a significant AI population. The University of Oklahoma supports a summer enrichment program which aims to identify and support minority students, including AI students, who aspire to enter medical school.[20] In 2014 the Oklahoma State University Center for Health Sciences, which houses the Oklahoma State University College of Osteopathic Medicine (OSUCOM), launched an Office for the Advancement of American Indians in Medicine and Science (OAAIMS) to recruit more American Indian high school and college students into medicine and science careers. Through mentoring and targeted programs, the initiative aims to increase the number of American Indians practicing medicine and working in the science fields. Ultimately, efforts made by the OAAIMS are intended to provide Native American students the means to be successful in these fields by offering hands-on experiences that combine Native culture, medicine, and science.[21] Programs include a culturally-based scientific expedition experience for high school students, residential camps with simulation exercises, and a number of outreach programs on-site with tribal partnerships. These focused efforts have been effective, as OSUCOM's latest incoming class of 2017 included 17 students who self-identified as AI/AN.[22]

The University of Minnesota Medical School (UMMS) founded its Duluth campus in 1972 specifically for the purpose of serving the needs of rural Minnesota and Native American communities and to be a national leader in improving health care access and outcomes in rural Minnesota and AI/AN communities. The UMMS also launched the Center for American Indian and Minority Health in 1987.[23] The purpose of the Center is to raise the health status of American Indians and Alaska Natives by: 1) recruiting and educating Native American medical students, 2) increasing awareness of American Indian health care issues, and 3) conducting research that serves the health interests of Native American communities.

Five medical schools in the southwest—the Universities of Arizona (Phoenix and Tucson), Colorado, New Mexico, and Utah—identified a collective need to increase student diversity, particularly with regard to AI/AN students. These five schools created the "4 Corners Alliance," and, in collaboration with the Association of American Indian Physicians, invite pre-med/health American Indian students to a free two-day Pre-Admissions Workshop (PAW) annually. The PAW aims to provide students with the information and skills necessary to succeed in the medical and health professions school admission process.[24]

Medical schools also have developed programs to address AI/AN health. For example, the University of Washington School of Medicine offers an Indian Health Pathways Certificate Program for medical students. The program's goals are to: 1) prepare both native and non-native medical students for careers in AI/AN health, 2) encourage research on AI/AN health issues, and 3) enhance curriculum on AI/AN health issues at the University of Washington School of Medicine.[25]

On a national level, the IHS supports AI/AN entry into the health professions and opportunities to explore career paths in AI/AN health care. Scholarships are available through the IHS Scholarship program, which has awarded more than 7,000 health professions scholarships since 1978. The IHS

website provides links to allow potential students to arrange IHS externships (with salary), and to coordinate AI/AN clerkship opportunities for medical students. In addition, post-graduation financial support is available through the IHS, with a loan repayment program of $20,000 per year of commitment (maximum $40,000) for health professions education loans, as well as a supplemental loan repayment program. The IHS also participates in the National Health Service Corps loan repayment program, with awards up to $50,000 for a two-year commitment.[26]

The University of Wisconsin, in collaboration with tribal organizations in Wisconsin and the Great Lakes Region, supports an outreach program, We are Healers, which aims to inspire AI youth to envision themselves as health professionals through stories of Native role models.[27]

Two organizations specifically provide support for AI/AN students aspiring to become physicians: the Association of American Indian Physicians (AAIP) and the Association of Native American Medical Students (ANAMS). The AAIP, whose mission includes promoting education in the medical disciplines, supports workshops, summer programs, scholarship programs, internships, and fellowships aimed at increasing the number of AI/AN students entering the health professions.[28] The ANAMS, whose mission is to assist with the recruitment, retention, and support of AI/AN students into medicine and other health careers, provides information on a number of scholarship opportunities available to AI/AN students.[29]

The causes of the declining percentages of applicants and matriculants are not clear, but in part may be explained by the pre-secondary education success of and college education opportunities for AI/AN students. AI/AN students have the highest high school dropout rates among all racial and ethnic groups tracked by the National Center for Educational Statistics (NCES).[30] Additionally, the college enrollment rate (23%) for AI/AN 18- to 24-year-olds is the lowest of all ethnic and racial groups tracked by the NCES.[31]A recent survey of AI/ANs found that for almost half of respondents, college attendance was never discussed during adolescence and young adulthood.[3] Overall, the AI/AN college graduation rate of 9.3% is well below the national average of 20.3%. The relative ineffectiveness of health professions pipeline programs for AI/AN has been described in the literature, possibly attributable to less rigor in primary and secondary education in science and mathematics.[32]

RELEVANT AMA POLICY AND ACTIVITIES

A list of relevant AMA policies on this issue is shown in the appendix. These include:

- D-200.985, “Strategies for Enhancing Diversity in the Physician Workforce”
- H-350.970, “Diversity in Medical Education”
- H-350.979, “Increase the Representation of Minority and Economically Disadvantaged Populations in the Medical Profession”
- H-350.960, “Underrepresented Student Access to US Medical Schools”

Aside from policy, since 2002 the AMA has supported the Doctors Back to School™ (DBTS), designed by the AMA Minority Affairs Consortium (today the Minority Affairs Section, or MAS) to highlight the need to expand the pipeline of underrepresented minorities (i.e., black, Latino, Native American) in medicine and eliminate minority health disparities. Through DBTS, physicians and medical students return to their communities to 1) pique young minority students’ interest in medicine by introducing them to “real-life” role models and 2) raise awareness of the need for more underrepresented minorities in the physician workforce. To date, DBTS has engaged more than 100,000 underrepresented minority youth. To expand the reach of the program and

number of volunteers, the MAS has developed partnerships with other AMA sections (e.g., Medical Student Section); medical societies/associations (e.g., American Society of Anesthesiologists; Association of American Medical Colleges); coalitions (e.g., Commission to End Health Care Disparities); nonprofit organizations (e.g., National Minority Quality Forum), and diversity pipeline programs in medicine (e.g., Tour for Diversity; Mentoring in Medicine).

Each year, the MAS also partners with the AMA Foundation's Physicians of Tomorrow scholarship program to offer the Minority Scholars Award to underrepresented minority medical students, with $10,000 awards toward their tuition expenses. Up to two students can be nominated by each medical school dean. In recent years, awards have been disbursed to 20-25 recipients annually. Since the inception of the program in 2004, 11 recipients have self-identified as Native Alaskans.

SUMMARY

Despite the current level of support, outreach, and pipeline programs as noted above, the number of AI/AN applicants/matriculants to medical schools remains quite low and essentially unchanged over the last 15 years, even as the total enrollment in U.S. medical schools has markedly increased.

Although AI/AN students who are able to succeed in pre-medical training have ample opportunity and high rates of success in gaining entry into medical schools, the current primary and secondary education infrastructure and socioeconomic factors for AI/AN students may be inadequate to promote successful entry in larger numbers into college-level education. While health professions pipeline programs to promote AI/AN entry are in place at a number of institutions, and these programs are showing success at the local level to promote medicine as a career path for AI/AN students, they are limited in size and scope and have not been successful to date in increasing AI/AN diversity in overall medical school enrollment or the physician workforce. Future initiatives might benefit from focused efforts to improve preparation of AI/AN students for entry into post-secondary education, particularly in the areas of science and mathematics.

TABLE: AI/AN APPLICANTS AND ENROLLMENT AT U.S. ALLOPATHIC AND OSTEOPATHIC MEDICAL SCHOOLS

Year	Allopathic medical schools			Osteopathic medical schools		
	AI/AN applicants	AI/AN matriculants	Total matriculants	AI/AN applicants	AI/AN matriculants	Total matriculants
16-17	127	54	21,025	54	21	7,575
15-16	115	55	20,627	30	20	7,219
14-15	117	53	20,343	39	26	7,012
13-14	110	43	20,055	38	30	6,636
12-13	108	52	19,517	46	32	5,986
11-12	101	46	19,230	40	27	5,788
10-11	114	55	18,665	40	32	5,428
09-10	111	51	18,390	43	23	5,227
08-09	131	66	18,036	51	39	4,950
07-08	152	67	17,759	59	34	4,528
06-07	147	70	17,880*	63	22	4,055
05-06	95	38	17,435*	59	22	3,908
04-05	107	53	17,109*	63	28	3,646
03-04	85	38	17,118*	60	18	3,308
02-03	112	56	16,488	55	26	3,079

Allopathic data extracted from data tables found on the AAMC website, unless otherwise noted.

Osteopathic data extracted from data tables found on the AACOM website.

* Data from Barzansky B, Etzel S. Medical Schools in the United States, *JAMA* annual data publications. Data are for first year enrollment, not matriculants.

APPENDIX: RELEVANT AMA POLICY

D-200.985, "Strategies for Enhancing Diversity in the Physician Workforce"

1. Our AMA, independently and in collaboration with other groups such as the Association of American Medical Colleges (AAMC), will actively work and advocate for funding at the federal and state levels and in the private sector to support the following: a. Pipeline programs to prepare and motivate members of underrepresented groups to enter medical school; b. Diversity or minority affairs offices at medical schools; c. Financial aid programs for students from groups that are underrepresented in medicine; and d. Financial support programs to recruit and develop faculty members from underrepresented groups.

2. Our AMA will work to obtain full restoration and protection of federal Title VII funding, and similar state funding programs, for the Centers of Excellence Program, Health Careers Opportunity Program, Area Health Education Centers, and other programs that support physician training, recruitment, and retention in geographically-underserved areas.

3. Our AMA will take a leadership role in efforts to enhance diversity in the physician workforce, including engaging in broad-based efforts that involve partners within and beyond the medical profession and medical education community.

4. Our AMA will encourage the Liaison Committee on Medical Education to assure that medical schools demonstrate compliance with its requirements for a diverse student body and faculty.

5. Our AMA will partner with key stakeholders (including but not limited to the Association of American Medical Colleges, Association of American Indian Physicians, Association of Native American Medical Students, We Are Healers, and the Indian Health Service) to study and report back by July 2018 on why enrollment in medical school for Native Americans is declining in spite of an overall substantial increase in medical school enrollment, and lastly to propose remedies to solve the problems identified in the AMA study.

6. Our AMA will develop an internal education program for its members on the issues and possibilities involved in creating a diverse physician population.

7. Our AMA will provide on-line educational materials for its membership that address diversity issues in patient care including, but not limited to, culture, religion, race and ethnicity.

8. Our AMA will create and support programs that introduce elementary through high school students, especially those from groups that are underrepresented in medicine (URM), to healthcare careers.

9. Our AMA will create and support pipeline programs and encourage support services for URM college students that will support them as they move through college, medical school and residency programs.

10. Our AMA will recommend that medical school admissions committees use holistic assessments of admission applicants that take into account the diversity of preparation and the variety of talents that applicants bring to their education.

11. Our AMA will advocate for the tracking and reporting to interested stakeholders of demographic information pertaining to URM status collected from Electronic Residency

Application Service (ERAS) applications through the National Resident Matching Program (NRMP).

12. Our AMA will continue the research, advocacy, collaborative partnerships and other work that was initiated by the Commission to End Health Care Disparities.
(CME Rep. 1, I-06 Reaffirmation I-10 Reaffirmation A-13 Modified: CCB/CLRPD Rep. 2, A-14 Reaffirmation: A-16 Appended: Res. 313, A-17 Appended: Res. 314, A-17)

H-350.970, "Diversity in Medical Education"

Our AMA will: (1) request that the AMA Foundation seek ways of supporting innovative programs that strengthen pre-medical and pre-college preparation for minority students; (2) support and work in partnership with local state and specialty medical societies and other relevant groups to provide education on and promote programs aimed at increasing the number of minority medical school admissions; applicants who are admitted; and (3) encourage medical schools to consider the likelihood of service to underserved populations as a medical school admissions criterion.
(BOT Rep. 15, A-99 Reaffirmed: CME Rep. 2, A-09 Reaffirmed in lieu of Res. 311, A-15)

H-350.979, "Increase the Representation of Minority and Economically Disadvantaged Populations in the Medical Profession"

Our AMA supports increasing the representation of minorities in the physician population by: (1) Supporting efforts to increase the applicant pool of qualified minority students by: (a) Encouraging state and local governments to make quality elementary and secondary education opportunities available to all; (b) Urging medical schools to strengthen or initiate programs that offer special premedical and pre-collegiate experiences to underrepresented minority students; (c) urging medical schools and other health training institutions to develop new and innovative measures to recruit underrepresented minority students, and (d) Supporting legislation that provides targeted financial aid to financially disadvantaged students at both the collegiate and medical school levels.
(2) Encouraging all medical schools to reaffirm the goal of increasing representation of underrepresented minorities in their student bodies and faculties.
(3) Urging medical school admission committees to consider minority representation as one factor in reaching their decisions.
(4) Increasing the supply of minority health professionals.
(5) Continuing its efforts to increase the proportion of minorities in medical schools and medical school faculty.
(6) Facilitating communication between medical school admission committees and premedical counselors concerning the relative importance of requirements, including grade point average and Medical College Aptitude Test scores.
(7) Continuing to urge for state legislation that will provide funds for medical education both directly to medical schools and indirectly through financial support to students.
(8) Continuing to provide strong support for federal legislation that provides financial assistance for able students whose financial need is such that otherwise they would be unable to attend medical school.
(CLRPD Rep. 3, I-98 Reaffirmed: CLRPD Rep. 1, A-08)

H-350.960, "Underrepresented Student Access to US Medical Schools"

Our AMA: (1) recommends that medical schools should consider in their planning: elements of diversity including but not limited to gender, racial, cultural and economic, reflective of the diversity of their patient population; and (2) supports the development of new and the enhancement

of existing programs that will identify and prepare underrepresented students from the high-school level onward and to enroll, retain and graduate increased numbers of underrepresented students. (Res. 908, I-08 Reaffirmed in lieu of Res. 311, A-15)

REFERENCES

[1] Abbasi J. Why are America Indians dying young? *JAMA*. 2018;319(2):109-111.

[2] U.S. Department of Health and Human Services; Indian Health Service Fact Sheet. Available at: https://www.ihs.gov/newsroom/factsheets/disparities/. Accessed December 14, 2017.

[3] Sancar, F, Abbassi J, Bucher K. Mortality among American Indians and Alaska natives. *JAMA*. 2018;319(2):112.

[4] United States Government Accountability Office. Report to the Committee on Indian Affairs, U.S. Senate. GAO-16-333. March 2016.

[5] Discrimination in America: Experiences and Views of Native Americans, November 2017. Available at: https://www.npr.org/documents/2017/nov/NPR-discrimination-native-americans-final.pdf. Accessed January 2, 2018.

[6] Indian Health Service: Health Professions. Available at: https://www.ihs.gov/careeropps/healthprofessions/. Accessed January 2, 2018.

[7] Diversity in the Physican Workforce: Facts and Figures 2014. AAMC. Available at: http://aamcdiversityfactsandfigures.org. Accessed January 2, 2018.

[8] Whitla DK et al. Educational benefits of diversity in medical school: a survey of students. Academic Medicine. 2003;78(5):460-466.

[9] The Physican Workforce: Projections and Research into Current Issues Affecting Supply and Demand. U.S. Department of Health and Human Services. 2008. Available at: https://bhw.hrsa.gov/sites/default/files/bhw/nchwa/projections/physiciansupplyissues.pdf. Accessed January 2, 2018.

[10] Saha S, Shipman SA. Race-neutral versus race-conscious workforce policy to improve access to care. Health Affairs; Jan-Feb 2008. Available at: https://www.healthaffairs.org/doi/full/10.1377/hlthaff.27.1.234. Accessed January 2, 2018.

[11] Taylor TL. A practice profile of native American physicians. Academic Medicine. 1989 Jul;64(7):393-396.

[12] What is the Tribal Self-Governance Program? Indian Health Service. Available at: https://www.ihs.gov/selfgovernance/aboutus/. Accessed February 22, 2018.

[13] DNAeXplained – Genetic Genealogy. Available at: https://dna-explained.com/2012/12/18/proving-native-american-ancestry-using-dna/. Accessed December 14, 2017.

[14] Association of American Medical Colleges. FACTS: Applicants, Matriculants, Enrollment, Graduates, MD-PhD, and Residency Applicants Data. Available at: https://www.aamc.org/data/facts/. Accessed December 14, 2017.

[15] American Association of Colleges of Osteopathic Medicine. Available at: https://www.aacom.org/. Accessed December 14, 2017.

[16] Functions and Structure of a Medical School: Standards for Accreditation of Medical Education Programs Leading to the MD Degree. March 2016. Available at: www.lcme.org. Accessed January 2, 2018.

[17] Accreditation of Colleges of Osteopathic Medicine: COM Continuing Accreditation Standards. 2017. Available at: www.osteopathic.org/inside-aoa/accreditation/COM-accreditation. Accessed January 2, 2018.

[18] Acosta D, Eliason J. Trends in Racial and Ethnic Minority Applicants and Matriculants to U.S. Medical Schools, 1980-2016. AAMC's Analysis in Brief 10(3): 2017.

[19] Indians into Medicine. Available at: https://med.und.edu/indians-into-medicine. Accessed December 14, 2017.

[20] OU Medicine Admissions. Available at: https://www.oumedicine.com/college-of-medicine/information-about/admissions. Accessed December 14, 2017.

[21] Office for the Advancement of American Indians in Medicine and Science. Available at: http://www.healthsciences.okstate.edu/oaaims. Accessed December 14, 2017.

[22] Shrum K, Vuong A. Summary of American Indian Physician Pipeline Program at OSU-COM. Report distributed at Oklahoma State University Center for Health Sciences. September 18, 2017; Tulsa, OK.

[23] University of Minnesota Medical School Center of American Indian and Minority Health. Available at: https://www.med.umn.edu/about/duluth-campus. Accessed December 14, 2017.

[24] Association of American Indian Physicians Pre Admission Workshop. Available at: https://www.aaip.org/media/news/m.blog/76/pre-admission-workshop. Accessed December 14, 2017.

[25] Indian Health Pathways (IHP). Available at: https://catalyst.uw.edu/workspace/dolson/38538/269261. Accessed December 14, 2017.

[26] Indian Health Service: Loan Repayment. Available at: https://www.ihs.gov/careeropps/loanrepayment/. Accessed December 14, 2017.

[27] We Are Healers. Available at: https://www.wearehealers.org. Accessed January 17, 2018.

[28] Association of American Indian Physicians. Available at: https://www.aaip.org. Accessed January 2, 2018.

[29] Association of Native American Medical Students. Available at: http://www.anamstudents.org/premed. Accessed January 2, 2018.

[30] National Center for Education Statistics. Status and Trends in the Education of Racial and Ethnic Groups. Indicator 16: High School Status Dropout rates. Available at: https://nces.ed.gov/programs/raceindicators/indicator_rdc.asp. Accessed December 14, 2017.

[31] National Center for Education Statistics. Status and Trends in the Education of Racial and Ethnic Groups. Indicator 21: Post-secondary graduation rates. Available at: https://nces.ed.gov/programs/raceindicators/indicator_red.asp. Accessed December 14, 2017.

[32] Smith SG, et al. Pipeline programs in the health professions, Part 1: Preserving diversity and reducing health disparities. *Journal of the National Medical Association*. 2009;101(9):836-851.