

Developing Graduate Medical Education Partnerships in American Indian/Alaska Native Communities

Michael A. Sundberg, MD, MPH
Damon P. Leader Charge, MA
Mary J. Owen, MD

Krishnan N. Subrahmanian, MD, MPhil
Matthew L. Tobey, MD, MPH
Donald K. Warne, MD, MPH

In the United States, rural American Indian/Alaska Native (AI/AN) populations face disproportionate health disparities and a shortage of health professionals.^{1–8} In particular, there is a lack of providers with AI/AN heritage or with sufficient knowledge of AI/AN cultures, perspectives on medical care, and the social determinants of health resonant within AI/AN communities.^{9,10}

Academic health centers (AHCs) are called to develop a workforce capable of addressing disparities in Indigenous populations, particularly through utilization of community-based partnerships.^{11,12} While a foremost investment by AHCs must address underrepresentation of AI/AN individuals in training, AHCs must also increase trainees' awareness of health inequities in rural AI/AN communities. This can be accomplished through curricula committed to AI/AN health and through supervised participation in care delivery.

Few graduate medical education (GME) training programs are based in rural AI/AN communities.¹³ Thus, GME learning primarily comes from Native American Health Center (NAHC) agreements with AHCs for elective resident rotations, which includes both tribal health systems and the Indian Health Service (IHS). However, to our knowledge, formal GME curricula for rotations in AI/AN communities in the United States have not been published.^{14,15} In this article, we describe 4 topics useful in directing the development of GME curricula in partnership with rural AI/AN communities, and discuss the unique relevance of each topic in the context of AI/AN health. The topics are intended to align with international consensus recommendations for health equity education in Indigenous populations and with Accreditation Council for Graduate Medical Education Clinical Learning Environment Review Program objectives to improve health disparity education for trainees.^{11,16} They additionally help establish trusting educational partnerships

between AI/AN communities and AHCs. We include learning objectives and curricular examples associated with each topic from one of our developing resident rotations in the TABLE.

Topics for Designing GME Curricula in AI/AN Communities

Topic 1: Understand AI/AN Health Care Delivery Systems

The resources—human, material, and financial—of a care delivery system strongly shape trainee education.¹⁷ Care delivery to AI/AN communities involves exchanges between the US federal government and sovereign AI/AN governments, and is predicated on the unique claim of AI/AN communities to health care services as a treaty right. Such exchange results in a health system different from other domestic settings; often there are both federal- and tribal-managed public health sectors that have different approaches and institutional cultures. Yet, despite the legal framework on which health services are based, there remain low per capita health expenditures in many AI/AN communities, high burdens of disease and disability, and significant challenges to NAHCs in providing care. Indeed, the IHS maintains the lowest per capita spending when compared to other large federally funded health services.¹⁸ Restricted funding, particularly in impoverished communities with economically limited land bases, influences high vacancy and turnover rates for health care providers, results in insufficiently competitive wages, and prevents infrastructure development within NAHCs.^{8,19} To fill the gaps in provider vacancies, NAHCs frequently must contract temporary providers who may have limited knowledge of, and investment in, the populations they serve.

An educational partnership with an AI/AN community provides an opportunity to introduce trainees, via supervised direct care, to challenges NAHCs face related to inadequate funding, provider shortages, and significant barriers to access to care. These

DOI: <http://dx.doi.org/10.4300/JGME-D-19-00078.1>

TABLE

Objectives, Materials, and Experiential Opportunities for Developing American Indian and Alaska Native (AI/AN) Graduate Medical Education Curricula^a

Topic	Curricular Objectives	Example Developing Curricular Materials and Experiences
Understand AI/AN health care delivery systems	1. Describe the administration and provision of health care to AI/AN communities through a NAHC 2. Gain insight into practice-based learning and improvement in a geographically isolated setting 3. Identify how quality improvement occurs in a NAHC	Curricular materials ▪ Rotation primer: the rotation's context within existing care delivery structures ▪ Case study: historical context of care delivery and health outcomes on a reservation Experiences ▪ Outpatient/inpatient supervised care at a local NAHC ▪ Supervised care provision within the public health outreach system and off-site clinic at a tribal correctional facility ▪ Expected participation in care conferences, committee meetings
Recognize AI/AN community-specific social determinants of health	1. Examine the prominent social determinants of health that contribute to morbidity and mortality in the community 2. Learn how to leverage patient care through collaboration with community outreach and community-based programs	Curricular materials ▪ Readings: local culture, history, and language ▪ Readings: AI/AN perspectives on health and community, historical trauma Experiences ▪ Local health leader-directed and -developed community visits ▪ Participation in longitudinal health programs for education and mentorship at a correctional facility, in local schools, or with community organizations
Gain appreciation for cross-sectorial, community-driven solutions on AI/AN reservations	1. Demonstrate cultural humility and actively seek opportunities to engage with the community to foster trusting relationships 2. Gain insight into how grassroots, community-based organizations function in AI/AN communities	Curricular materials ▪ Readings and papers: best practice approaches to mitigating AI/AN health disparities ▪ Booklet: local programs focused on health and economic development ▪ Readings: Understanding traditional healing practices Experiences ▪ Planned visits to local government and nongovernmental programs ▪ Participation in local health practices, such as <i>inipi</i> (sweats), and community health events, as appropriate
Build motivation for a career addressing AI/AN health disparities	1. Explore multiple ways to direct a career working in partnership with AI/AN communities toward improved health equity	Curricular materials ▪ Prerotational, midway, and postrotational meetings with program staff to discuss resident-formalized learning goals, debriefing related to specific rotational needs, personal needs, and postrotational professional goals ▪ Encouraged reflection time ▪ Engagement and connection with local community social events

Abbreviation: NAHC, Native American Health Center.

Note: Reading and viewing materials are organized and available to trainees online.

^a Curriculum is in partnership with the Sicangu Lakota Oyate of the Rosebud Sioux Reservation and the Indian Health Service in South Dakota.

opportunities compel trainee growth in care provision that is mindful of resource allocation,^{20,21} provide a sense for the urgent need for solutions to expand high-quality care at low cost, and allow trainees to observe how NAHC financing decisions affect a vulnerable population. We have also found that time providing clinical care is complemented by time engaging with public health outreach systems

long-existent in many rural AI/AN communities, such that trainees broadly understand care delivery strategies on reservations.

Topic 2: Recognize Rural AI/AN Community-Specific Social Determinants of Health

Despite increased awareness of the value of experiential (project-based and direct exposure) learning within communities, health equity education in medical curricula continues to be entrenched in abstract discussion of generalized social determinants of health. Such instruction fails to train clinicians to be advocates for AI/AN communities facing specific health inequities.²² Rather, a curriculum using experiential learning within an AI/AN community, which inherently promotes cognitive disequilibrium (or the evaluation of one's own ideas about the world in the context of new ideas or surroundings), allows a trainee to better relate to the health needs of that community.

While not unique to AI/AN populations, the concept of historical trauma and its generational effect on health as a major social determinant can be attributed to the work of AI/AN scholars.²³ Adding community-based activities and study of community-recommended resources for trainees that examine how historical armed conflict, forced assimilation, and subsequent legal and political policy have shaped health within rural AI/AN communities is important for developing GME curricula. Such topics provide contextual understanding of several disproportionate causes of morbidity and mortality found in many AI/AN communities, such as chronic liver disease, suicide, homicide, and alcohol or other drug use disorders.³

Additionally, for our own developing curricula, we attempt to find opportunity within the local community to respectfully demonstrate the effects of such social challenges. This has been best accomplished through community visits and engagement of learners in longitudinal health projects with local, knowledgeable, and community-respected AI/AN health leaders. For instance, at one of our sites learners share health information with community members and learn reciprocally in educational sessions at a tribal correctional facility—promoting understanding of a unique interaction between population health and a tribal justice system. As another example, our trainees have explored the health impacts (including rates of heart disease and diabetes) of commodity food dependence that occurred after assimilation and loss of both the right and the ability to harvest traditional foods.

Topic 3: Gain Appreciation for Cross-Sectorial, Community-Driven Solutions on AI/AN Reservations

Movement toward health equity is best accomplished through a community's own recognition and use of its inherent strengths; many of these strengths vary among communities and result in novel approaches to improving care. GME rotations in rural AI/AN communities should provide trainees exposure to existing traditional medical practices and to cross-sectorial, grassroots movements focused on health improvement. Such exposure is expected to help build understanding of the value of interprofessional and community-led change, as well as influence a trainee's ability to analyze health system-to-community linkage needs on a reservation.

Within our own developing curricula, we focus on connecting trainees to community-led healing practices, such as sweat lodge ceremonies (*inipi*), and the opportunity to interact with traditional healers who are willing to share cultural perspectives and knowledge that inform local health practices. Such cultural perspectives as AI/AN origin stories, the value of community and elders over individual needs, and the role of spiritual practices in health may not correspond well to the US biomedical approach to either individual or public health, yet many AI/AN community members will seek both traditional and biomedical care. For trainees, understanding the benefits (and potential limitations) of AI/AN culture and traditional medical practices helps them to discuss and improve the treatment approach for AI/AN patients seen at NAHCs. Likewise, we encourage participation in federal, tribal, or nongovernmental program activities supporting health. For example, our current rotations involve introduction to substance use treatment facilities, interaction with community health representative networks, learning from food sovereignty initiatives, and engaging with primary- or secondary-level students interested in health professions. Such participation connects trainees to a variety of AI/AN community members working toward a climate of health.

Topic 4: Build Motivation for a Career Addressing AI/AN Health Inequities

Rotations in communities facing health challenges different from those of a trainee's home institution can influence or sustain interest toward careers focused on health equity.^{24,25} Our developing curricula involve time for reflection, study of AI/AN community-recommended resources focused on health and health equity on reservations, and regular engagement of trainees in analysis of

their experiences. We anticipate a focus on this topic in GME curricular design to assist in orienting trainee careers toward working to reduce health disparities. Future careers may involve continued direct health care within AI/AN communities or indirect practices positively affecting AI/AN communities.

Challenges for GME Partnerships in AI/AN Communities

Trusting partnerships in medical education between AI/AN communities and AHCs are best developed with long-term and thoughtful discourse, as success is imperative on a true sense of the tribal community from their perspective. Recognizing that there is diversity in culture, geography, and community needs within the 573 federally recognized tribes and villages,²⁶ goals for educational partnerships may vary considerably or not be in the best interest of an AI/AN community toward health improvement. Distance between AI/AN communities and AHCs may challenge relationship building toward GME rotations, but it is not an insurmountable barrier given modern transportation capabilities, well-modeled global rotations at many AHCs, and the opportunity to use and develop technologies such as telemedicine or online learning.¹³ Rotations require establishment of stable material resources (housing, available food sources, etc); they also require trainees, staff, and community organizations committed to educational exchange. Finally, there appears to be an increased need for recruitment of AI/AN administrators in leadership roles within AHCs, who may be able to better engage across tribal/IHS leadership and AHC administrations to promote GME partnerships in AI/AN communities.

Looking Forward: Increasing GME Partnerships in AI/AN Communities

Alongside strategic programs to increase AI/AN representation and leadership within AHCs, collaborations in GME using the above topics can provide opportunities for GME to advance health equity in AI/AN communities. Practically, educators within AHCs should engage faculty working in AI/AN health systems, consider geographic proximity to AI/AN communities, connect to national professional networks such as the Association of American Indian Physicians,²⁷ and ultimately meet with AI/AN community members, to explore the value of and need for developing GME educational partnerships. Educational partnerships can increase general awareness of disparities within AI/AN populations among trainees,

cultivate trusting relationships, and develop a workforce committed to improving AI/AN health. Such partnerships between AI/AN communities and AHCs should be considered a key strategy to reduce disparities and promote health equity in AI/AN populations.

References

1. Slattery ML, Ferucci ED, Murtaugh MA, Edwards S, Ma KN, Etzel RA, et al. Associations among body mass index, waist circumference, and health indicators in American Indian and Alaska Native adults. *Am J Health Promot.* 2010;24(4):246–254. doi:10.4278/ajhp.080528-QUAN-72.
2. Hutchinson RN, Shin S. Systematic review of health disparities for cardiovascular diseases and associated factors among American Indian and Alaska Native populations. *PLoS One.* 2014;9(1):e80973. doi:10.1371/journal.pone.0080973.
3. Espey DK, Jim MA, Cobb N, Bartholomew M, Becker T, Haverkamp D, et al. Leading causes of death and all-cause mortality in American Indians and Alaska Natives. *Am J Public Health.* 2014;104(3 suppl):303–311. doi:10.2105/AJPH.2013.301798.
4. White MC, Espey DK, Swan J, Wiggins CL, Ehemann C, Kaur JS. Disparities in cancer mortality and incidence among American Indian and Alaska Natives in the United States. *Am J Public Health.* 2014;104(3 suppl):377–387. doi:10.2105/AJPH.2013.301673.
5. Beals J, Manson SM, Whitesell NR, Spicer P, Novins DK, Mitchell CM. Prevalence of DSM-IV disorders and attendant help-seeking in 2 American Indian reservation populations. *Arch Gen Psychiatry.* 2005;62(1):99–108. doi:10.1001/archpsyc.62.1.99.
6. Warne D, Dulacki K, Spurlock M, Meath T, Davis MM, Wright B, et al. Adverse childhood experiences (ACE) among American Indians in South Dakota and associations with mental health conditions, alcohol use, and smoking. *J Health Care Poor Underserved.* 2017;28(4):1559–1577. doi:10.1353/hpu.2017.0133.
7. Iglehart JK. The challenging quest to improve rural health care. *N Engl J Med.* 2018;378(5):473–479. doi:10.1056/NEJMp1707176.
8. Indian Health Service. IHS Recruitment. <https://www.ihs.gov/dhps/programperformancedata/recruitment>. Accessed September 25, 2019.
9. Fuglestad A, Prunuske J, Regal R, Hunter C, Boulger J, Prunuske A. Rural family medicine outcomes at the University of Minnesota Medical School Duluth. *Fam Med.* 2017;49(5):388–393.
10. Association of American Medical Colleges. Diversity in the Physician Workforce: Facts and Figures 2014. Section II: Current Status of the US Physician Workforce. <http://www.aamcdiversityfactsandfigures>.

- org/section-ii-current-status-of-us-physician-workforce/index.html. Accessed September 25, 2019.
11. Jones R, Crowshoe L, Reid P, Calam B, Curtis E, Green M, et al. Educating for Indigenous health equity: an international consensus statement. *Acad Med*. 2018;94(4):512–519. doi:10.1097/ACM.0000000000002476.
 12. Lewis M, Prunuske A. The development of an Indigenous health curriculum for medical students. *Acad Med*. 2017;92(5):641–648. doi:10.1097/ACM.0000000000001482.
 13. Tobey M, Amir O, Beste J, Jung P, Shamasunder S, Tutt M, et al. Physician workforce partnerships in rural American Indian/Alaska Native communities and the potential of post-graduate fellowships. *J Health Care Poor Underserved*. 2019;30(2):442–455. doi:10.1353/hpu.2019.0040.
 14. Francis-Cracknell A, Murray M, Palermo C, Atkinson P, Gilby R, Adams K. Indigenous health curriculum and health professional learners: a systematic review. *Med Teach*. 2019;41(5):525–531. doi:10.1080/0142159X.2018.1497785.
 15. Pitama SG, Palmer SC, Huria T, Lacey C, Wilkinson T. Implementation and impact of Indigenous health curricula: a systematic review [published online ahead of print June 22, 2018]. *Med Educ*. doi:10.1111/medu.13613.
 16. Accreditation Council for Graduate Medical Education Clinical Learning Environment Review Program. National Report of Findings 2016: Health Care Disparities. Issue Brief No. 4. Chicago, IL; 2017. https://acgme.org/Portals/0/PDFs/CLER/CLER_Health_Care_Disparities_Issue_Brief.pdf. Accessed September 25, 2019.
 17. Whetstone S, Autry M. Linking global health to local health within an ob/gyn residency program. *AMA J Ethics*. 2018;20(1):253–260. doi:10.1001/journalofethics.2018.20.3.medu1-1803.
 18. Government Accountability Office. Indian Health Service: spending levels and characteristics of the IHS and three other federal health care programs. <https://www.gao.gov/assets/700/695871.pdf>. Accessed September 25, 2019.
 19. Government Accountability Office. Indian Health Service: agency faces ongoing challenges filling provider vacancies. <https://www.gao.gov/assets/700/693940.pdf>. Accessed September 25, 2019.
 20. Warne D, Bane Frizzell L. American Indian health policy: historical trends and contemporary issues. *Am J Public Health*. 2014;104(3 suppl):263–267. doi:10.2105/AJPH.2013.301682.
 21. O'Connell JM, Wilson C, Manson SM, Acton KJ. The costs of treating American Indian adults with diabetes within the Indian Health Service. *Am J Public Health*. 2012;102(2):301–308. doi:10.2105/AJPH.2011.300332.
 22. Sharma M, Pinto AD, Kumagai AK. Teaching the social determinants of health: a path to equity or a road to nowhere? *Acad Med*. 2018;93(1):25–30. doi:10.1097/ACM.0000000000001689.
 23. Brave Heart MYH. Oyate Ptayela: rebuilding the Lakota Nation through addressing historical trauma among Lakota parents. *J Hum Behav Soc Environ*. 1992;2(1–2):109–126.
 24. Palazuelos D, Dhillon R, Nelson AK, Savage KP, Conover R, Katz JT, et al. Training toward a movement: career development insights from the first 7 years of a global health equity residency. *J Grad Med Educ*. 2018;10(5):509–516. doi:10.4300/JGME-D-18-00213.1.
 25. Litzelman DK, Gardner A, Einterz RM, Owiti P, Wambui C, Huskins JC, et al. On becoming a global citizen: transformative learning through global health experiences. *Ann Glob Health*. 2017;83(3–4):596–604. doi:10.1016/j.aogh.2017.07.005.
 26. Indian Affairs Bureau. Indian Entities Recognized and Eligible to Receive Services from the United States Bureau of Indian Affairs. Federal Register, 2018. www.federalregister.gov/documents/2018/07/23/2018-15679/indian-entities-recognized-and-eligible-to-receive-services-from-the-united-states-bureau-of-indian-affairs. Accessed September 25, 2019.
 27. Association of American Indian Physicians. www.aaip.org. Accessed September 25, 2019.



Michael A. Sundberg, MD, MPH, is Assistant Professor, University of Minnesota School of Medicine; **Damon P. Leader Charge, MA**, is former Director of Health Administration, Rosebud Sioux Tribe, and Assistant Program Coordinator, Native American Healthcare Scholars Program, University of South Dakota Sanford School of Medicine; **Mary J. Owen, MD**, is Assistant Professor, University of Minnesota School of Medicine, and Director, Center for American Indian and Minority Health; **Krishnan N. Subrahmanian, MD, MPhil**, is Assistant Professor, Hennepin Healthcare and University of Minnesota School of Medicine; **Matthew L. Tobey, MD, MPH**, is Instructor, Harvard Medical School, and Assistant in Medicine, Massachusetts General Hospital; and **Donald K. Warne, MD, MPH**, is Associate Dean of Diversity, Equity, and Inclusion, and Director of Indians into Medicine, University of North Dakota School of Medicine.

The views expressed do not necessarily reflect the official views of the Indian Health Service or policies of the Department of Health and Human Services, nor does the mention of trade names, commercial practices, or organizations imply endorsement by the US Government.

Corresponding author: Michael A. Sundberg, MD, MPH, University of Minnesota, Department of Medicine, Division of General Internal Medicine, MMC 741, 420 Delaware Street SE, Minneapolis, MN 55455, 612.301.1409, msundberg@umn.edu