

Increasing physician workforce among underrepresented populations, with emphasis on low socioeconomic Native and Hispanic populations.

Harris Ahmed, MPH

The Domenici Institute

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Executive Summary

New Mexico has the highest state share of Hispanics and second highest state share of Native Americans in the nation, at 46.7 and 8.8 percent respectively. Within the physician workforce however, Hispanic and Native Americans only account for 14.3 and 0.2 percent respectively. Such discrepancy has proven to be a significant barrier to both access and quality in healthcare, especially for minority communities. Cultural humility in care and a diverse physician workforce improves patient outcomes and experiences, as well as cuts down cost. This matter is a hot topic nationwide within the field of medicine, and currently there are various initiatives taking place both nationally and here in New Mexico to address lack of appropriate physician diversity.

Alternative schools such as magnet and charter schools have been effective in producing highly capable and engaged students with superior outcomes as compared to those students not in said schools. Supporting magnet schools that have significant enrollment of underrepresented minority students and linking them with medical institutions has been an effective model nationwide for decades. Medical programs like Duke and University of Toledo as well as University of New Mexico and Burrell College of Osteopathic Medicine have seen success when engaging local schools by providing them with resources and linkage programs. Medical school admissions committees that are diverse themselves and take a holistic approach to gauging applicants, beyond MCAT and GPA, have seen success in recruiting physicians from Native and Hispanic populations. This method of assessing candidates requires admissions committees to receive training to value the effects details of applicant's lives such as parent's education and neighborhoods where they were raised have on a given applicant. Underrepresented minorities selected using such holistic methodology have shown no difference in ability to perform in or complete medical school.

Minority physicians are more likely to practice medicine in underserved communities given the opportunity. Therefore, it is essential that funding for programs like Teaching Health Center Graduate Medical Education, that focus on residency creation in tribal and other medically underserved areas, are

shown support by legislators. Lastly, student debt is a significant barrier for students, in particular those from low socioeconomic backgrounds, in pursuing medical school. Thus, it is important for legislators to expand funding for heavily sought after loan forgiveness for service programs like the New Mexico Health Professional Loan Repayment program.

Introduction

This paper aims to address the specific issue of lack of physician recruitment from under represented populations, with emphasis on Hispanic and Native American communities, and solutions to bridge this gap. New Mexico has the highest state share of Hispanics and second highest state share of Native Americans in the nation; at 46.7 and 8.8 percent respectively.^{1,2} However when it comes to the physician workforce, Hispanics and Native Americans only account for 14.3 and 0.2 percent, respectively.³ All but one county in New Mexico is designated as a health professional shortage area.⁴ The research is indisputable that minority physicians are more likely to provide medical care to minority, underserved and low socio-economic communities.^{5,6} Furthermore, minority patients actively seek out minority physicians for care, and are five times as likely as non-minorities to have a member of an ethnic minority as their primary physician.⁷ Among minority groups, Hispanics are nineteen times as likely.⁷ Increasing Hispanic and Native American presence in medicine will provide direct relief to health professional shortage areas and meet the health care needs of New Mexico's diverse patient demographics.

Hispanic and Native American populations are less insured and have worse health outcomes across nearly all variables as compared to Whites.⁸ Cultural competency/humility is key in the physician-patient relationship and inconsistencies serve as a significant barrier to access and quality of care, contributing to decreased patient adherence to treatment, less patient follow up, and worse patient experiences.^{9,10} Lack of diversity among our physician workforce is further crippling already existing poor health outcomes of our underserved populations.

Providing quality physicians built to meet the needs of our communities will not only address the state's provider shortage and mitigate health care disparities but it will also financially empower underserved communities in New Mexico. Sick days and illnesses are incredibly costly, time consuming, and diminish productivity of our residents. Additionally, it is important to remember that a physician brings in revenue, economic stimulus, and job creation on top of healthcare to a given location. In New Mexico, physicians annually create (directly and indirectly) a total of \$5.5 billion in economic output, with each physician on average supporting nearly ten jobs and \$45,665 in local and state tax revenues.¹¹ New Mexico has the oldest physician population in the nation as 35.9 percent of physicians are the age of 60 or older, making this a critical time to ensure that the makeup of our state's future physician workforce more accurately reflects demographic realities on the ground so that quality and access to care can improve.¹²

Currently, several approaches are in place to increase physician workforce from under represented populations. These approaches range from policy measures, to school administration protocols, and down to local community engagement. These include, but are not limited to, expanding residency programs into communities where underrepresented populations live, recognizing extenuating circumstances and barriers students from lower socioeconomic backgrounds often face in the admissions process, alternative schools, and linkage and gateway programs to name a few. I will explore these different approaches and provide recommendations based on my findings.

Methodology

I have conducted a policy scan and analysis of programs and policies that currently exist that aim to enhance physician recruitment from under represented populations. Additionally, I have conducted a qualitative analysis of the interviews I conducted with key players. I have interviewed Adrian Alba, the director of admissions at the Burrell College of Osteopathic Medicine at New Mexico State University (BCOM), the president of the nationally award winning pediatrics club and local of Las Cruces Roxanne Waggoner. I have also interviewed two Hispanic female medical students from Española, New Mexico

and the past president of the Student Osteopathic Medical Association, another BCOM student club on campus actively involved in the community. I spoke to Adrian about the importance of recruiting medical students from under represented populations and strategies that BCOM has implemented to recruit one of the most diverse student bodies in the nation, along with policy measures he feels would assist BCOM's efforts. Roxanne and John shared their efforts towards increasing local recruitment and barriers they face in mobilizing to reach out to students. My interviews with Delayna and Mariah of Española centered around their experiences on what helped them get to medical school, barriers they faced, and any insight they had on ways to improve recruitment from cities like theirs. I drew from my experience working with local pre-medical students from New Mexico State University (NMSU) and University of Texas at El Paso (UTEP) along with my work with students in inner city Los Angeles as a backdrop for my analysis and discussions with others.

Existing Options and Findings

Alternative Schools and Early Student Outreach

Magnet schools emerged in the 1970's as a means to desegregate schools and provide equal learning opportunity to students of all races.¹³ Overall, the effectiveness of such schools is contestable with regional and local variation. Magnet schools aim to achieve parity in education across race through integrated learning environments and through specialized academic focus. A subset of schools focus on healthcare and medicine, and a few exist locally in Las Cruces and El Paso such as Arrowhead Park Medical Academy and the Maxine Silva Health Magnet. These programs aim to foster scientific curiosity and development in their students with special emphasis on the healthcare professions.

Studies have demonstrated that magnet and charter schools increase student achievement and motivation as well as family and teacher satisfaction with school.¹⁴ Additionally, students attending magnet schools have higher graduation rates from high school, higher admissions rates to colleges, and are better equipped with resources to attend college.¹⁴ Magnet and other alternative school systems that are most effective are those with partnerships with universities, indicating that the presence of BCOM in

Las Cruces will likely yield positive results for Arrowhead Park Medical Academy. I reached for data from the Arrowhead Park Medical Academy, but was unable to retrieve appropriate data.

The Youth Empowerment Project, a project coordinated by the University of New Mexico Hospital Research Nursing Division, has been an example of a successful university health system collaborating with local schools. YEP has enrolled over 500 students from underserved communities through their summer mentoring programs. Of these participants over a six-year span, 78 percent of students entered post-secondary educational programs and 63 percent entered health care careers, highlighting the importance of grass roots involvement and direct mentorship by medical schools and systems.¹⁵ Many similar programs exist statewide that engage tens of high school and middle school students, cultivating their drive to pursue medicine and other careers in healthcare. BCOM has been offering a MCAT preparation program for local pre-medical students. Students enrolled in the program last year saw an increase in their MCAT scores, on average by 30 percent.¹⁶

The local Pediatrics Club at BCOM won a national award last year for being the top Pediatrics Club in the nation. Additionally, the Student Osteopathic Medical Association at BCOM is one of the best in the nation. Both clubs focus on local outreach and community support. The president of the pediatrics club, Roxanne Waggoner, and former president of SOMA John Rajala, shared with me the host of programs their clubs coordinate. These programs include “mini med school” with after school programs for elementary and middle school aged children, information panels for high school students on how to prepare for medical school, and workshops and tours for undergraduate students. Both feel the programs have been extremely effective based on local engagement, activity and enthusiasm. Time will tell if these programs have truly been effective, but both presidents feel that normalizing the discussion of medicine early for these students and guiding those close to applying are steps in the right direction. When Roxanne asks the elementary school children who wants to be a doctor when they grow up, they all scream “me!” Although they may end up choosing different career paths, Roxanne believes it is important to normalize the discussion early and help students realize they have resources available for them to help. In terms of

barriers to finding willing partners in the community or students to volunteer, Roxanne says she finds no issue outside of working around the busy schedules of medical students. John mentioned that he finds outreach to be more impactful when medical students of Native and Hispanic backgrounds, the same background as student participants, present and lead sessions.

Medical School Admissions & Engagement

The American Association of Medical Colleges, AAMC, has provided insight and webinars to raise awareness and address the issue of lack of diversity in medical schools. An expert panel assembled by the AAMC consisted of Gerald Hill, MD, president of the Association of American Indian Physicians, Norma Poll-Hunter, PhD, senior director for diversity and policy at the AAMC, and Mary Owen, MD, the Director of the Center of American Indian and Minority Health. For Native Americans specifically, the panel highlighted the importance of identifying, developing and mentoring promising students through pipeline programs beginning in K-12 and through college. Additionally, they cited the importance of having diversity on admissions committees, conducting pre-admissions workshops, and establishing clinical tribal health preceptorships.¹⁷

Data also shows that establishing formal partnerships with minority medical student organizations such as the Latino Medical Association and the Association of Native American Medical Students is an effective means to recruit Hispanic and Native American students. Such practices were successful for the University of Toledo College of Medicine, UTCOM, in recruiting minority students. The formal partnership between the school and the student organizations was rated 4 out of 5, with 5 being most important and 1 being not important, by 100 percent of minority matriculates in deciding to attend University of Toledo College of Medicine. Two students stated that the partnership was “crucial” and “the main reason” for their decision to attend UTCOM.¹⁸

BCOM’s mission statement reflects a stated emphasis to serve the underserved communities in the Southwest United States. Just in its first year, BCOM has established itself as one of the most diverse

medical schools in the nation, recruiting ten times the national average of Native American Students and four times the amount of Hispanic students.¹⁹ BCOM has multiple linkage programs with local institutions such as NMSU and Arrowhead Park Medical Academy, providing local students a pipeline with focused support to facilitate their admission into the school. One such pathway, the “BEAR” pathway, allows Native American and Indian students to apply without having to pay an application fee and expedite their application process. Such programs facilitate applications and relieve financial burdens associated with applying to medical school. Another pipeline, the osteopathic medicine pathway program, has already enrolled fourteen undergraduate students in its first two years.

Graduate Medical Education

Most medical students with little exception must receive graduate medical education, or residency training, in order to practice medicine in the United States. Funding for graduate medical education (GME) largely comes from Medicare and Medicaid. However, the Balanced Budget Act of 1997 placed caps on the amount of federally funded residency positions. Today this number is far too small to meet the needs of our nation, especially the needs of the most vulnerable parts of society. There is heavy focus on increasing GME creation in rural and underserved areas in order to provide direct relief and increase the likelihood that physicians remain in these locations. Physicians are more likely to practice where they are from, or where they train, with data showing that two thirds of physicians who completed medical school and residency training in the same state remained in the state to practice.¹²

Programs such as Teaching Health Center Graduate Medical Education, THCGME, are currently in place to increase residency creation in rural and community hospital settings to address lack of physician presence in said areas. THCGME programs are predominantly located in Federally Qualified Health Centers, Rural Health Clinics, and Tribal health centers, with over half of THCGME programs training sites located in medically underserved communities.²⁰ This program has been extremely successful in meeting the demands of underserved communities, and currently trains 732 residents in 57 primary care residency programs across 24 states, including a teaching health center in Lordsburg, New

Mexico.²⁰ Only 38.2 percent of medical students that attend medical school in New Mexico remain in the state to practice, compared to the 65.8 percent of students that attend medical school and receive their graduate medical education in New Mexico.²¹ This points to a dire need to expand residency programs in the state as it is more likely that not only minority but all physicians will train at these locations and remain long term.

Case Examples

Themes prevalent in literature and research reemerge in the narratives of our own local students at BCOM. I found commonalities in what I discovered in macro level research and my conversations with Delayna Garcia and Mariah Maestas, two Hispanic female medical students from Española, New Mexico. They both stated a major barrier to their pursuit of medicine was not knowing a physician or having consistent, meaningful guidance throughout their educational journey. They had to make do with the bits and pieces of mentoring they could find online or in sporadic seminars. By extension, shadowing physicians was difficult, as they did not have any family or friends that were physicians in the context of an area with few physicians already. This again highlights the importance of local medical schools and hospitals making themselves readily available on a consistent and meaningful basis in a way that supports students structurally, beyond occasional volunteerism. Mariah pointed to UNM's Diversity Program and MCAT+ program, designed to help minority students succeed at the MCAT, as a great tool in her journey. It was not the occasional workshop or superficial volunteering that was most valuable, but rather a structured program head by University of New Mexico (UNM) directly that was most beneficial.

Recommendations

Support Alternative Schools and Provide Structural Support for Initiatives That Focus On Student Outreach

Magnet schools have shown to be an effective mechanism to enhance student performance, motivation and satisfaction with school and increase both high school graduation and college admission rates.¹⁴ A study assessing a summer program put on by the Robert Wood Johnson Foundation to support minority college students in their journey to medical school found that participants had 70 percent greater

odds than the minority control group of students in gaining admission to medical school.²² Another study looking at efforts in the University of California system found similar results, finding that minority students enrolled in their specialized medical post baccalaureate programs that focused on minority students from under represented communities were twice as likely as the control group to enroll into medical school.²³

Local initiatives lead by UNM and BCOM have proven to be highly engaging and effective. From MCAT preparation courses, to workshops and summer mentorship programs these programs have borne fruit. Legislators and both UNM and BCOM must expand support for these grass roots programs in the form of financial support and networking to further bolster their impacts. Research shows that occasional or superficial engagement, such as occasional mini medical school days and student workshops, does not produce long-term benefits for students and schools, and that funding is key for long term sustainability.²⁴ If we wish to make meaningful difference in the education and outlook of minority students with hopes that they will pursue medicine, we must legitimize organizations like YEP and BCOM student organizations like SOMA and ACOP. This is achievable in part by providing funding opportunities for such organizations to pursue at the local or state level. A scholarship or funding pool for these schools and organizations to apply for after demonstrating effectiveness will go a long way in ensuring these initiatives are sustainable and have potential to grow. Additionally, funding will incentivize others to pursue similar acts of service.

Establishing a Holistic Assessment of Applicants in the Admissions Process

Experts in the field and preliminary research shows that emphasis must be given to extenuating circumstances that students come from, with attention to detail on items like parent's education and income, hours worked while attending college, cultural barriers, and neighborhoods where students were raised among other details.²⁵ Ignoring these factors does not permit for a true assessment of a given students capabilities. Schools must look at academic factors but also personal attributes, as well as train

admissions committee on these variables. Additionally, schools must establish strong partnerships with undergraduate health science academic advisors, as this has proven to be effective.²⁵

University of California San Francisco (UCSF) and Duke made concerted efforts to increase enrollment of underrepresented minorities into their programs in the 1960s. Many medical schools followed their example, tripling enrollment of underrepresented minorities into medical schools from 1968-1973.²⁶ These numbers stagnated in the 80s before another increase in the early 1990s.²⁶ During periods of increased enrollment, the schools focused heavily on broadening their admissions policies and establishing educational pipeline programs with local school districts and universities. The success of these programs confirm the importance of the impact an engaged medical school can make in increasing diversity. Often the belief is that considering external circumstances and the whole applicant rather than a statistic heavy approach compromises the intellectual quality of students and future physicians. The research however shows that the social context of standardized tests has uniquely negative effects on minority student test scores.²⁷ Further, research shows minority students accepted under affirmative action programs fare no differently than other students in performance or graduation rates.²⁸ Although I have not commented on affirmative action, the principle that I am relying upon is that lower standardized test scores does not significantly affect performance in medical school, to a certain extent.

Continue Funding for Teaching Health Center Graduate Medical Education

THCGME has provided much needed relief in the form of residency creation in rural, tribal and health professional shortage areas.²⁰ Minority providers such as Native American and Hispanic physicians are more likely to care for the underserved and/or minority communities.²⁹ Thus, protecting and expanding THCGME funding directly ties to alleviating our access and diversity problems in the state.

Expand Slots for Existing Loan Forgiveness for Service Programs

Currently, 74 percent of medical students go into massive debt, with an average of \$190K per person.³⁰ This serves as a significant barrier for students in pursuing medicine, and this factor disproportionately affects those students that already come from humble beginnings. If we support loan

forgiveness programs, we increase the chance that students from Native and Hispanic communities will apply for medical school. Increased funding for the New Mexico Health Professional Loan Repayment Program and similar programs is of the utmost importance, especially with the influx of 161 new graduates that will be coming out from BCOM starting 2020. In 2013, there were 130+ applications for just 20 spots in the New Mexico Health Professional Loan Repayment Program.¹⁵ The number of applicants will exponentially rise after 2020, as BCOM graduates its first class. In a poll I administered to BCOM students, nearly 98 percent of the 80+ participants stated that they were interested in loan forgiveness programs, specifically in New Mexico. This is an incredible opportunity for legislators to act, and for universities and the community to rally around. This demand can be met by increasing funding for spots. As the research shows, Native and Hispanic physicians will be the most likely to pursue these programs, and the prevalence of such programs will remove one massive barrier, that of student debt, for underrepresented minority students.

Conclusion

In the end, a decision is necessary, and that is whether we truly wish to tap into the massive potential of underrepresented communities. If we wish to empower our communities and provide the best healthcare possible, we must look to increase physician diversity. Increasing diversity will provide relief to medically underserved communities and fill in our provider shortage gaps statewide. Additionally, it will provide much-needed economic stimulus to underserved areas, on top of improving quality and access to care. The center of this movement towards recruiting more Native American and Hispanic students to medicine centers around engaged medical schools with the appropriate backing of legislators. Partnerships between medical schools and local schools need strengthening, and funding should be made available to proven outreach programs in order to legitimize and formalize their work. Such structural consistency is tantamount. Additionally, medical schools locally must continue their holistic admissions process. Lastly, legislators must support residency creation in the state and any effort nationwide that accomplishes this goal. Along with this, legislators must expand funding and spots for loan forgiveness

programs, as the returns on this investment will reap benefits long term. A systematic effort with all parties involved and engaged can lead to synergy that in the end will benefit the health of our communities.

References

- AAMC. (2016). New Mexico Physician Workforce Profile.
- American College of Physicians. (2010). Racial and Ethnic Disparities in Health Care. Retrieved January 13, 2018, from https://www.acponline.org/acp_policy/policies/racial_ethnic_disparities_2010.pdf
- BCOM MCAT Prep Course. (2018, January 12). Retrieved January 14, 2018, from <https://bcomnm.org/academics/bcom-mcat-prep-course/>
- Brown, A., & Lopez, M. H. (2013, August 29). II. Ranking Latino Populations in the States. Retrieved January 13, 2018, from <http://www.pewhispanic.org/2013/08/29/ii-ranking-latino-populations-in-the-states/>
- Can Cultural Competency Reduce Racial and Ethnic Health Disparities? A Review and Conceptual Model. (n.d.). Retrieved January 13, 2018, from <http://journals.sagepub.com/doi/abs/10.1177/1077558700057001S09>
- Center for Workforce Studies. (2015). 2015 State Physician Workforce Database. AAMC.
- Disparities In Human Resources: Addressing The Lack Of Diversity In The Health Professions. (n.d.). Retrieved January 14, 2018, from <http://www.healthaffairs.org/doi/10.1377/hlthaff.27.2.413>
- Effective Practices for the Recruitment, Retention, and Education of Native American Medical Students. (n.d.). Retrieved January 14, 2018, from <https://www.aamc.org/initiatives/diversity/learningseries/446822/effectivepracticeswebianr.html>
- Gray, B., & Stoddard, J. J. (1997, August). Patient-physician pairing: does racial and ethnic congruity influence selection of a regular physician? Retrieved January 13, 2018, from <https://www.ncbi.nlm.nih.gov/pubmed/9247848>
- HPSA Find. (n.d.). Retrieved January 13, 2018, from <https://datawarehouse.hrsa.gov/tools/analyzers/HpsaFindResults.aspx>
- IMS Health. (2014). The Economic Impact of Physicians in New Mexico. Retrieved January 13, 2018, from https://www.nmms.org/sites/default/files/images/2014_march_economic_impact_of_physicians_in_nm_a_ma_ims.pdf
- Institute of Medicine (US) Committee on Institutional and Policy-Level Strategies for Increasing the Diversity of the U.S. Healthcare Workforce. (1970, January 01). Increasing Diversity in the Health Professions: A Look at Best Practices in Admissions. Retrieved January 14, 2018, from <https://www.ncbi.nlm.nih.gov/books/NBK216007/>
- Integrated Magnet Schools: Outcomes and Best Practices. (2013). Institute on Metropolitan Opportunity University of Minnesota Law School.
- J.C. Cantor et al., “Effect of an Intensive Educational Program for Minority College Students and Recent Graduates on the Probability of Acceptance to Medical School,” *Journal of the American Medical Association* 280 , no. 9 (1998): 772 –776.
- K. Grumbach and E. Chen, “Effectiveness of University of California Postbaccalaureate Premedical Programs in Increasing Medical School Matriculation for Minority and Disadvantaged Students,” *Journal of the American Medical Association* 296 , no. 9 (2006): 1079 –1085

Komaromy, M., Grumbach, K., Drake, M., Vranizan, K., Lurie, N., Keane, D., & Bindman, A. B. (1996, May 16). The role of black and Hispanic physicians in providing health care for underserved populations. Retrieved January 13, 2018, from <https://www.ncbi.nlm.nih.gov/pubmed/8609949>

Moy, E., & Bartman, B. A. (1995, May 17). Physician race and care of minority and medically indigent patients. Retrieved January 13, 2018, from <https://www.ncbi.nlm.nih.gov/pubmed/7739078>

New COM's makeup reflects diversity of region it serves. (2016, August 25). Retrieved January 14, 2018, from <https://thedo.osteopathic.org/2016/08/building-dreams-new-com-reflects-diversity-of-surrounding-community/>

New Mexico QuickFacts from the US Census Bureau. (n.d.). Retrieved January 13, 2018, from <https://web.archive.org/web/20120309044958/http://quickfacts.census.gov:80/qfd/states/35000.html>

New Mexico Health Care Workforce Committee - hsc.unm.edu. (n.d.). Retrieved January 13, 2018, from <https://www.bing.com/cr?IG=B682702CDEF341DFBC4A7AA86B0D6D33&CID=141E826E67756E7D2F91891966DA6F9B&rd=1&h=U8hwyHp7mMJudA3WSK6qWrPnzKKCPRa45UQNkx2WmU&v=1&cr=https%3a%2f%2fhsc.unm.edu%2fassets%2fdoc%2feconomic-development%2fnmhcwc-report-2014.pdf&p=DevEx.5065.1>

New Mexico Health Care Workforce Committee. (2014).

Office of Innovation and Improvement. (2004). Creating Successful Magnet School Programs. US Department of Education.

R.C. Davidson and E.L. Lewis, “Affirmative Action and Other Special Consideration Admissions at the University of California, Davis, School of Medicine,” *Journal of the American Medical Association* 278 , no. 14 (1997): 1153 –1158

Rumala, B. B., & Cason, F. D. (2007, September). Recruitment of underrepresented minority students to medical school: minority medical student organizations, an untapped resource. Retrieved January 14, 2018, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2575864/>

Smedley et al., eds., *In the Nation’s Compelling Interest*.

Taking the Sting Out of Medical School Debt. (2017, April 04). Retrieved January 14, 2018, from <https://news.aamc.org/medical-education/article/taking-sting-out-medical-school-debt/>

Teaching Health Center Graduate Medical Education (THCGME) Program. (2017, July 01). Retrieved January 14, 2018, from <https://bhw.hrsa.gov/grants/medicine/thcgme>

The relationship between the race/ethnicity of generalist physicians and their care for underserved populations. (n.d.). Retrieved January 14, 2018, from <http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.87.5.817>

Notes

1. <http://www.pewhispanic.org/2013/08/29/ii-ranking-latino-populations-in-the-states/>
2. <https://web.archive.org/web/20120309044958/http://quickfacts.census.gov:80/qfd/states/35000.html>
3. <https://hsc.unm.edu/assets/doc/economic-development/nmhcwc-report-2014.pdf>
4. <https://datawarehouse.hrsa.gov/tools/analyzers/HpsaFindResults.aspx>

5. <https://www.ncbi.nlm.nih.gov/pubmed/8609949>
6. <https://www.ncbi.nlm.nih.gov/pubmed/7739078>
7. <https://www.ncbi.nlm.nih.gov/pubmed/9247848>
8. https://www.acponline.org/acp_policy/policies/racial_ethnic_disparities_2010.pdf
9. <http://journals.sagepub.com/doi/abs/10.1177/1077558700057001S09>
10. <http://www.healthaffairs.org/doi/10.1377/hlthaff.27.2.413>
11. https://www.nmms.org/sites/default/files/images/2014_march_economic_impact_of_physicians_in_nm_ama_ims.pdf
12. [https://members.aamc.org/eweb/upload/2015StateDataBookpercent20\(revised\).pdf](https://members.aamc.org/eweb/upload/2015StateDataBookpercent20(revised).pdf)
13. <https://www2.ed.gov/admins/comm/choice/magnet/report.pdf>
14. [file:///C:/Users/harris.ahmed/Downloads/integrated-magnets-best-practicespercent20\(1\).pdf](file:///C:/Users/harris.ahmed/Downloads/integrated-magnets-best-practicespercent20(1).pdf)
15. <https://hsc.unm.edu/assets/doc/economic-development/nmhwc-report-2014.pdf>
16. <https://bcomnm.org/academics/bcom-mcat-prep-course/>
17. <https://www.aamc.org/initiatives/diversity/learningseries/446822/effectivepracticeswebianr.html>
18. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2575864/>
19. <https://thedo.osteopathic.org/2016/08/building-dreams-new-com-reflects-diversity-of-surrounding-community/>
20. <https://bhw.hrsa.gov/grants/medicine/thcgme>
21. <https://www.aamc.org/download/484138/data/newmexicoprofile.pdf>
22. J.C. Cantor et al., “Effect of an Intensive Educational Program for Minority College Students and Recent Graduates on the Probability of Acceptance to Medical School,” *Journal of the American Medical Association* 280 , no. 9 (1998): 772 –776.
23. K. Grumbach and E. Chen, “Effectiveness of University of California Postbaccalaureate Premedical Programs in Increasing Medical School Matriculation for Minority and Disadvantaged Students,” *Journal of the American Medical Association* 296 , no. 9 (2006): 1079 –1085
24. <http://www.healthaffairs.org/doi/10.1377/hlthaff.27.2.413>
25. <https://www.ncbi.nlm.nih.gov/books/NBK216007/>
26. <http://www.healthaffairs.org/doi/10.1377/hlthaff.27.2.413>
27. Smedley et al., eds., *In the Nation’s Compelling Interest*.
28. R.C. Davidson and E.L. Lewis, “Affirmative Action and Other Special Consideration Admissions at the University of California, Davis, School of Medicine,” *Journal of the American Medical Association* 278 , no. 14 (1997): 1153 –1158
29. <http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.87.5.817>
30. <https://news.aamc.org/medical-education/article/taking-sting-out-medical-school-debt/>