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Shortage of Healthcare Providers in Rural Home Health Care: A Health Systems Analysis Recommendation for Health Care Providers

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Abstract

The United States currently faces great challenges in the healthcare industry, particularly in rural home-based healthcare delivery subsystem. Consumers who are living in these remote locations have very little access to quality healthcare services and thus have poorer health outcomes compared to their urban counterparts. The purpose of this work is to describe the types of challenges experienced by the home healthcare sub-system and provide recommendations on how to correct these issues using evidence-based research that indicates positive outcomes. Some of the obstacles specific to rural home healthcare to be discussed include: ineffective or nonexistent use of health information technology (HIT); lack of hospital networks; poor financial incentives and reimbursement system; and lack of evaluation for continuous improvement. This work will present recommendations to address these challenges using the health systems analysis approach.

Introduction

Factors Impacting Home Health Care Management

The World Health Organization, WHO (2017) reported that there is a shortage of about 7.2 million of healthcare providers (HCPs) globally, and this number is projected to rise to 18 million by 2030 if urgent mechanisms are not put in place to train more HCPs. The WHO strongly recommends that all nations work on strategies to encourage and motivate HCPs to work in rural home health care settings (2017). Because most HCPs tend to concentrate in urban settings rather than rural communities (WHO, 2017). The reasons describing why HCPs prefer to work in urban rather than rural communities are similar across countries.

A study done by Darkwa et al. (2015) clearly asserts that poor living conditions such as housing, insecure environments, insufficient medical equipment, lack of opportunities for career development and poor remuneration reimbursement drive HCPs away from practicing in rural environments. Although this study was done in Bangladesh, similar reasons are asserted to the lack of HCPs in the U.S., especially in American Indian and Alaska Natives (AI/AN) reservations. Another reason as to why there is greater shortage of HCPs in rural home health care is the low enrollment of AI/ANs students to medical school and other professions (Young et al, 2016). Because of this, there are fewer culturally competent providers to work in rural home healthcare settings. Based on these evidence-based research articles, a conclusion can be made that remuneration/ reimbursement system, hospital system, technology healthcare system and healthcare professional system contribute interchangeably to the lack of health care providers in rural communities. Higher income, professional interaction, access to modern facilities, access to technology, continuing education and growth, high standards of living, and better social amenities have also been noted as some major reasons why physicians prefer to practice in urban settings (Shi and Singh, 2015).

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These mentioned systems will be discussed below and their effect and contribution to the lack of HCPs in rural communities will be discussed beginning with the correlations of technology, hospital and reimbursement sub-systems to the shortage of health care providers and professionals.

Correlation of Technology Systems to HCPs Shortage

Researchers have demonstrated that the practice of HCPs in rural home health communities depends on the availability of technology system, which allow HCPs to effectively serve rural populations. Therefore, there is evidence that continuous innovation in technology leads to discoveries of new, complex and sophisticated medical equipment that HCPs utilize to reach as many consumers as possible. Raghupathy and Go Forth (2012) demonstrated that the use of interactive, computer-based prevention and intervention technology assisted HCPs to serve AI/AN populations in rural and remote areas. Most of these youths were suffering from underage alcohol abuse, illegal drug use and sexually transmitted diseases. With the use of technology, HCPs were able to increase access to service without increasing costs at the patient level. Thus revealing a direct relationship of the utility of technology systems positively impacting care in rural settings.

Correlation of Hospital Systems to HCP Shortage

According to the American Hospital Association, "57 million Americans rely on hospitals in rural or non-urban towns for medical care" (Healthtrust, 2018). However, the hospital system in rural communities is declining. Since 2010, over 80 rural hospitals have closed and hundreds more are at risk of closing (Healthtrust, 2018). Therefore closing a rural hospital increases distress on the existing resources and economy due to a loss of employment for healthcare workers, emergency services and primary care capacity. The decline of hospitals gives rise to the overall HCPs shortage in rural communities; thus discouraging healthcare providers even more about working in rural settings

Correlation of Finance/Reimbursement Systems to HCP Shortage

There is a shortage of HCPs in rural communities because of poor remuneration and reimbursement system in place, resulting from lack of federal funding. As the rural population ages and the increase of baby boomers who require home health care services, hospitals and clinics in rural areas work on thin margins, limiting their financial ability (Slabach, 2018). These factors drive HCPs to suburban and urban areas where remuneration and reimbursement is higher, with high-tech hospitals and greater number of patients with better private insurance coverage.

An example that illustrates how these factors can amass and impact a culture would be American Indians and Alaska Natives (AI /AN). Research demonstrates that mortality rates among AI/AN populations are higher when compared to other U.S. races (IHS, 2018) (Table 1). Even though most Americans enjoy better health status, there is a shocking disparity in accessing health care services for AI/AN populations, especially for those living in rural communities (IHS, 2018). Given the fact that some U.S. citizens have the privilege to receive better healthcare services, the lingering health disparities among AI/AN populations are troubling. Policy makers have identified that inadequate funding for the Indian health care delivery system is to blame for the shortage of HCPs, and this is one of the main causes of health and social disparities experienced in AI/AN communities (IHS, 2018). If the Indian Health Service (IHS) will be adequately funded, then telemedicine technology and decentralization of hospitals systems will be possible. Eventually, HCPs will have better remuneration and reimbursement scheme which will encourage them to work in rural communities and offer quality health care services to rural populations. Therefore, the rankings above of various diseases and their impact on AI/AN populations can be solved. Adequate funding for rural communities ultimately improves access to medical technology, the opening of affiliate clinics and more staff.

Table 1: Age Adjusted Mortality Disparity Rates among AI/AN Populations in the IHS per 100,000 persons.

	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)	194.7	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	50.0	7.6	6.6
Chronic lower respiratory diseases	46.6	42.2	1.1
Cerebrovascular diseases (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	15.3	1.5

Source: Indian Health Services. (2018). Fact Sheets: Disparities. Age Adjusted Mortality Disparity Rates among AI /AN Populations in the Indian Health Service per 100,000 persons.

Framework for Strengthening Rural Home Health Care

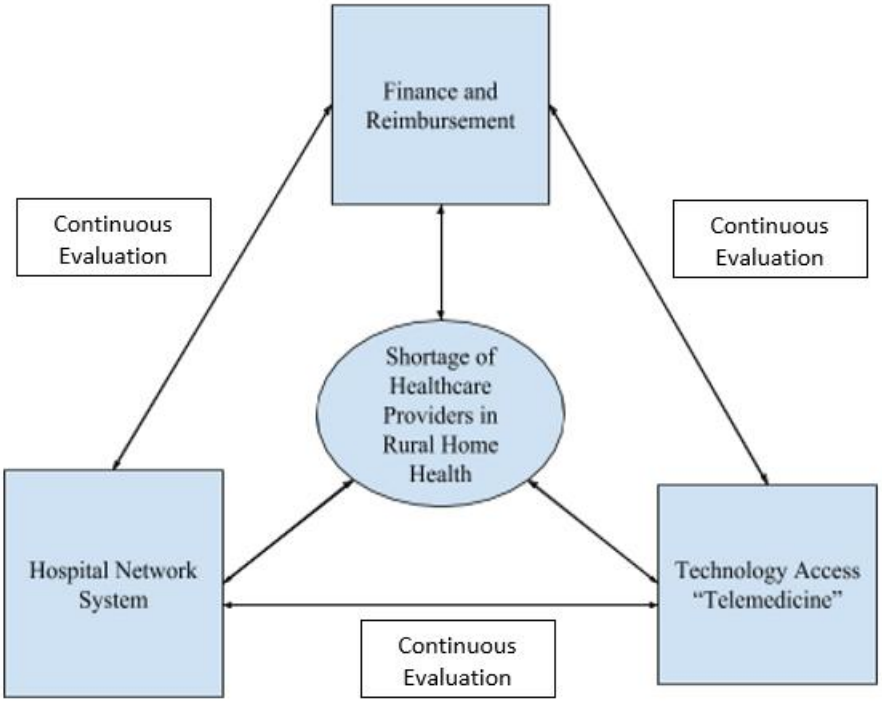
The systems-as-cause thinking approach identifies where responsibilities within the sub-system should be placed. Hospital systems, technology systems, Health Care provider systems, remuneration/reimbursement system, and consumers all hold a responsibility within rural home health care subsystem. The hospital system has a mandate of opening clinics to better reach all persons. Technology system has duties to equip and offer quality high-tech cares in every setting, such as application of telemedicine, cardio-monitor and electronic medical records. Technology will facilitate the connection of physicians to rural communities. Health care provider as a system should train culturally congruent providers who are willing to serve rural communities. The finance system should improve scheme of services to retain HCPs in remote areas and allocate funds to eradicate social determinants of health affecting those in rural communities. In short, rural home health consumers should be willing to follow HCPs treatment recommendations to achieve quality care in rural communities. Therefore, it's only with strong determination and political-will that these four parties will harmoniously work together and create conducive atmosphere for a strong home health care industry.

Using the system foundations, rural home healthcare suffers from shortage of HCPs because of the social determinants of health. The cultural, historical and social factors of populations in rural communities exclude them from accessing HCPs compared to those in urban/ suburban settings. Rural home health care resources system experiences shortages of health care workers and specialists. In fact, there is difficulty in recruiting, retaining and reimbursing HCPs in rural home health care than urban settings. Many practicing medical providers prefer to work in larger cities because of better and higher reimbursements received compared to providers in rural communities (Rural Health Information Hub, 2017). Unfortunately, under the system process, there is poor infrastructure of healthcare facilities for rural populations. For example, there is lack of hospital network systems, in rural communities to coordinate health care services for rural patients. For example, consider the how distance between two rural hospital centers in a Mid-west State in the U.S. will be quite different when comparing the geographic distance between two hospital centers in an urban area. The main objective of any system framework is to have measurable system outcomes. According to our diagram, rural communities experience barriers in accessing health care services because of lack of HCPs. The ultimate results are poor health outcomes for rural populations. In addition, rural communities lack access and cost-effective medical technology innovations to enhance service delivery. For example, due to the lack of trained staff, there is a minimal application of telemedicine, cardio-monitor and electronic medical record surveillance systems in rural setting resulting in the disparity in access of HCPs.

In unfolding the factors affecting rural home health care service delivery and management, we findineffective or nonexistent use of technology and the lack of continuous improvementprograms, which leads to poor or

unfavorable satisfaction scores when rural patients were interviewed about the health care services they are receiving. Therefore, the lack of HCPs in rural home health care is directly related to problems facing rural home health care as discussed in our case study (Figure 1).

Figure 1: Evaluations of Recommendations on Shortage of HCP in Rural Home Healthcare



Source: Mettler, T., and Vimarlund, V. (2011). The Need of a Multi-Actor Perspective to Understand Expectations from Virtual Presence: Managing Elderly Home Care Informatics. *Informatics for Health and Social Care, 36*(4), 220–232.

This work offers four recommendations: 1) improving technology, 2) expanding hospital network system to rural areas, 3) improving remuneration reimbursement mechanisms and 4) utilizing evaluation as a tool for continuous improvement; therefore modifying the Mettler and Vimarlund (2011) model multi-actor perspective (Figure 1). Mettler and Vimarlund (2011), found that technological equipment usually used in homecare settings included: diagnostic tools and sensors, laptop and tablet PC, mobile phone and GPS devices, multimedia devices, personal digital assistant (PDA), and web-based tools and internet impacts the care. With implementation of these devices into the rural home health care delivery system, HCPs will be able to connect with rural consumers and offer quality primary cares, as well as secondary and tertiary cares. Additionally, these devices enhance patient-physician interactions. An example is the use of telehealth equipment used in video conferencing between rural patient and HCP for management of long-term diseases.

Conversely, continuous improvement programs for rural home health care will help with requesting more funds to be used in hospital network expansion and better schemes of services for HCPs. Most rural consumers are either under Medicare or Medicaid insurance coverages (Medicare and Medicaid, 2017). Medicareis the primary insurer for individuals in the US aged 65 years and older and those under age 65 years old with certain disabling conditions like chronic kidney disease (Medicare and Medicaid, 2017). Medicaid also covers low-income adults, children, elderly, disabled individuals, the medically needy (Medicare and Medicaid, 2017). With most rural populations enrolled in either Medicare or Medicaid programs, hospitals systems have a unique ability to expand into remote areas.

Recommendations for Industry

1. Incorporation of Access to Technology

Innovations in technology can help improve rural home healthcare. With telemedicine, or the delivery of clinical diagnosis and monitoring equipment, 23 states passed telehealth parity laws for private insurance as of 2016 (Marcoux, 2016). Alaska is categorized as one of the more progressive states when it came to telemedicine laws. In a study on rural Alaskan Native, patients reported that the incorporation of telemedicine reduced travel time and healthcare costs (Hiratsuka, 2013). Telemedicine eliminated the need to travel long distances to urban based health clinics and housing fees when patients' conditions required longer stays. For AI/AN communities, telemedicine technologies have the potential to offer access to specialized services, support groups, and mental health professionals (Kruse, 2016). Because of the lack of specialty providers in rural settings, telehealth medicine practice has helped to connect rural consumers to be seen by specialists remotely (RHI, 2017). Therefore, employing the use of communication technology, which improved access to complex health care services and primary care services for many rural consumers, such as remote counseling and tele-pharmacy.

2. Decentralization of Hospital Network System

Many of the hospital systems in rural areas are stand-alone facilities and do not have a network of affiliated clinics in surrounding rural communities. Hospital networks and community clinics are often focused in urban areas, sidelining the rural communities. Therefore, decentralizing hospital networking system will help reach consumers in remote areas and help them access quality healthcare services. One way of addressing this issue is to have all those states with rural communities to form networks affiliation to reach their rural populations. An example of a successful networking system is the creation of The North Central Regional Center for Rural Development (NCRCRD) which constitutes rural partnerships of 12 states in the Central/Midwest region of the United States to supply HCP to rural communities (NCRCRD, 2018). If more networks of such nature are created across most rural communities in the U.S., there will be enough HCPs for all rural populations.

3. Implementation of Improved Remuneration and Reimbursement Schemes

Poor remuneration and reimbursement due to inadequate federal funding from the government also contributes to lack of HCP in rural communities. These are factors that drive HCP to urban hospital systems which have better remuneration and reimbursement because the consumers have better private insurance coverage for services. An article by Warne and Frizzell titled "American Indian Health Policy: Historical Trends and Contemporary Issues" (2014), states that in 1890 the MD working in the Native community was paid $1028 compared to the MDs working outside the Native communities who were paid $2823 and $2622 respectively. Alma et al, (2015) found that University of California, Los Angeles (UCLA) started a program dubbed "Pathways for Students into Health Professions" (PSHP) after it noted in 2013 that among the 28,000 undergraduate students, there was 4% of African-American origin, 18% Latinos and less than 1% AI/AN students. These results were shocking and devastating because this poor enrollment of minority students translates into lack of culturally competent trained HCP in rural communities. Such programs will work with minority students to eliminate financial burden, increase awareness of job opportunities and increase enrollment into health care courses (Alma et al,2015). As a result minority students will graduate and pursue opportunities to secure jobs, especially in particular geographic areas of need, to improve the quality of life among their people.

4. Evaluation as a Tool for Continuous Improvement

The quality of the healthcare delivery system in rural communities is subject to the availability of HCPs, good hospital networking and telemedicine technology. Rural home health care experiences a great shortage of primary care physicians, specialists, nurses, and others health care workers overall (Burrows, 2012).

Changes to the evaluation plan are necessary when HCPs are not increasing in rural settings, or if there is stagnation of hospital expansion, and if there is no technological improvement in telemedicine to rural areas. As a result, the federal government will be willing to allocate more money for rural communities, as well as for the IHS. A strategy in working primarily on decentralizing hospitals to remote areas may be providing incentives and award-based retention systems, but making changes if results lack. Another example would be considering the costs of some technology to install and operate without trained personnel. Locating and implementing optional electronic medical record systems and telemedicine alternatives when substitutes become necessary. Finally, utilizing mid-level allied health professionals to locate physician teams and connect them to rural patient practices. Knowing when it is appropriate to utilize community health workers to strategize bringing quality healthcare services to rural communities.

Conclusion

In conclusion, shortage of HCPs in rural home healthcare is one factor among many other social determinants of health that have historically affected minority populations, especially AI/AN populations.

According to Marmot, 2015 these social determinants of health are not blackness or whiteness, but the accumulation of disadvantages throughout the course of one's life. These disadvantages in the U.S. have been greatly linked with the widespread institutional racial disparities in health care system. This health systems analysis resulted in recommendations for working under the shortage of care professionals for rural home healthcare. Firstly, hospital network decentralization, or situating remote areas with clinics, will increase access to care. Secondly, ensuring those clinics are fully equipped with high-level technology products, including diagnostic, surgical and clinical tools. Thirdly, recruiting and maintaining an adequate number of HCPs to utilize these products at places of practice. And finally, evaluating those methods, policies and protocols to implement needed change. Implementing these recommendations or variations thereof, may positively impact mortality rates of various diseases and reduce disparities in health care delivery to rural populations.

References

Bultas, M. W., Ruebling, I., Breitbach, A., and Carlson, J. (2016). Views of the United Stateshealthcare system: Findings from documentary analysis of an interprofessional education course. *Journal of Interprofessional Care*, *30*(6), 762–768.https://doi.org/10.1080/13561820.2016.1206860

Burrows, E. (2012). Health Care Workforce Distribution and Shortage Issues in Rural America. National Rural Health Association Policy Brief. Retrieved from:https://www.ruralhealthweb.org/getattachment/Advocate/Policy-Documents/HealthCareWorkforceDistributionandShortageJanuary2012.pdf.aspx?lang=en-US

Collins, Sarah. (2012). Primary Care Shortages: Strengthening this Sector is Urgently Needed, Now and in Preparation for Healthcare Reform. *American Health and Drug Benefits, 5*(1), 40-7.

Darkwa, E. K., Newman, M. S., Kawkab, M., and Chowdhury, M. E. (2015). A Qualitative study of factors influencing retention of doctors and nurses at rural healthcare facilities in Bangladesh. *BMC Health Services Research*, *15*(1), 1–12.https://doi.org/10.1186/s12913-015-1012-z.

Guerrero, A., Holmes, F., Inkelas, M., Perez, V., Verdugo, B., andKuo, A. (2015). Evaluation of the Pathways for Students into Health Professions: The Training of Under-Represented Minority Students to Pursue Maternal and Child Health Professions. *Maternal and Child Health Journal*, *19*(2), 265–270. https://doi.org/10.1007/s10995-014-1620-y

Goldsteen, R. L., Goldsteen, K. andGoldsteen, B. Z. (2016). *Jonas' Introduction to the U.S. Healthcare System*. New York, NY: Springer.

Hiratsuka, V., Delafield, R., Starks, H., Ambrose, A. J., and Mau, M. M. (2013). Patient and Provider Perspectives on Using Telemedicine for Chronic Disease Management among Native Hawaiian and Alaska Native People. *International Journal of Circumpolar Health*, *72*. doi:10.3402/ijch.v72i0.21401

Indian Health Service (2018). Fact Sheets: Disparities. Retrieved fromhttps://www.ihs.gov/newsroom/factsheets/disparities/

Kozhimannil, K. B., Casey, M. M., Hung, P., Han, X., Prasad, S., andMoscovice, I. S. (2015). The Rural Obstetric Workforce in US Hospitals: Challenges and Opportunities. *The Journal of rural health: official journal of the American Rural Health Association and the National Rural Health Care Association*, *31*(4), 365-72.

Kruse, C. S., Bouffard, S., Dougherty, M., andParro, J. S. (2016). Telemedicine Use in Rural Native American Communities in the Era of the ACA: A Systematic Literature Review. *Journal of Medical Systems*, *40*(6), 145.

Maniam, G. (2018). Effect of Managed Care Systems on Healthcare Quality of Low-Income Women. *Journal of Business and Educational Leadership*, *7*(1), 72–85.

Marcoux, R. M., andVogenberg, F. R. (2016). Telehealth: Applications from a Legal and Regulatory Perspective. *P and T: Journal for Formula Management,41*(9), 567-70.

Marmot, Michael. (2015). *The Health Gap: The Challenge of an Unequal World.* London, UK: Bloomsbury Press.

Medicare and Medicaid. (2017). Funk andWagnalls New World Encyclopedia. Retrieved from https://apps2.hclib.org/auth/EDS.

Mettler, T., andVimarlund, V. (2011). The Need of a Multi-Actor Perspective to Understand Expectations from Virtual Presence: Managing Elderly Home Care Informatics. *Informatics for Health and Social Care, 36*(4), 220–232. https://doi.org/10.3109/17538157.2011.554931

North Central Regional Center for Rural Development. (NCRCRD, 2018). Retrieved fromhttps://www.canr.msu.edu/ncrcrd

Raghupathy, S., andGo Forth, A. L. (2012). The HAWK2 Program: A Computer-Based Drug Prevention Intervention for Native American Youth. *American Journal of Drug and Alcohol Abuse*, *38*(5), 461–467. https://doi.org/10.3109/00952990.2012.694531.

Rural Health Information Hub (2017). Healthcare Access in Rural communities. Retrieved fromhttps://www.ruralhealthinfo.org/topics/healthcare-access

Sheehan, A., Walrath-Greene, C., Fisher, S., Crossbear, S., and Walker, J. (2007). Evidence-Based Practice Knowledge, Use, and Factors That Influence Decisions: Results from an Evidence-based Practice Survey of Providers in American Indian/ Alaska Native Communities. *American Indian and Alaska Native Mental Health Research: The Journal of the National Center*, *14*(2), 29–48.

Shi, L. and Singh, D. (2015). Major Characteristics of U.S. Health Care Delivery, from the book, *Delivering Healthcare in America: A Systems Approach* (6th Edition). Sudbury, Massachusetts: Jones and Bartlett Learning.

Skillman, S. M., Palazzo, L.,Keepnews, D. and Hart, L. G. (2006), Characteristics of Registered Nurses in Rural Versus Urban Areas: Implications for Strategies to Alleviate Nursing Shortages in the United States. *The Journal of Rural Health, 22*: 151-157. doi:10.1111/j.1748-0361.2006.00024.x

Slabach, B. (2018). Fixing the medical staff shortage problem in rural areas. Retrievedfrom https://www.beckershospitalreview.com/population-health/fixing-the-medical-staff-shortage-problem-in-rural-areas.html

TEDxFargo: Dr. Donald Warne. All my relations -- a traditional Lakota approach to health equity. Retrieved from: https://d2l.sdbor.edu/d2l/le/content/1022017/viewContent/5818305/View.

Warne, D., and Bane Frizzell, L. (2014). American Indian Health Policy: Historical Trends and Contemporary Issues. American Journal of Public Health, (S3), s263-s267. doi:10.2105/AJPH.2013.301682

Williamsen, K. (2017). GOVERNMENT-RUN Healthcare. *New American (08856540)*, *33*(6),16.

Willging, C. E., Sommerfeld, D. H., Jaramillo, E. T., Lujan, E., Bly, R. S., Debenport, E. K., Lujan, R. (2018). "Improving Native American elder access to and use of health care through effective health system navigation." *BMC Health Services Research*, (1).https://doi.org/10.1186/s12913-018-3182-y.

World Health Organization (WHO, 2017). Strengthening the global health workforce. Retrieved from https://www.frontlinehealthworkers.org/blog/strengthening-global-health-workforce.

Young, M. C. L. (2016). To Empower and Educate: Bringing Native Students into the Healthcare Professions. *Tribal College Journal*, *27*(4), 46–47.