

Dental Health Care Access in Rural Communities

Jeyanthi Bhaheetharan

University of Wisconsin - Madison

Biology; Medical Microbiology & Immunology

Date of Graduation: May 2011

INTRODUCTION

Many social and environmental factors interact to determine the access, delivery, and quality of dental health care. While the delivery of quality care is important, access to oral health care is a more immediate concern for rural residents. If residents cannot access care, the delivery and quality of care becomes irrelevant. Rural populations can experience greater dental caries, poverty, smoking use, transportation barriers, and lower water fluoridation (Jones et. al 2009; Skillman et al. 2010). Adults in rural areas are more likely to have untreated dental decay, permanent loss of teeth and engage in smoking and tobacco use, increasing the likelihood of oral cancers, periodontal diseases and dental caries (Fos and Hutchinson 2003; Skillman et al. 2010). For children in the United States, tooth decay is the most common chronic disease. Due to dental-related illness, children lose over 51 million school hours each year (U.S. Department of Health and Human Services 2010).

Oral health disparities demonstrate inefficiencies within the current dental health care system. This paper will explore why dental health care access is a public health problem for rural communities in the United States. Recognizing multiple interacting causes of barriers to accessing oral health care can aid interventions on the level of patients, community, dental providers, and system.

CONSEQUENCES OF LIMITED OR NO ACCESS TO DENTAL HEALTH CARE

Limited access to dental health care can have physical and psychological consequences for individuals in addition to economic costs to society. The consequences of inadequate access to oral health care in rural communities tend to be long-term. Without access to dental services, residents defer curative services and may delay diagnosis of oral health problems, preventative measures and improvements to oral hygiene habits. Children suffering from oral diseases who

lack treatment often experience systemic health problems, significant pain, and an annual loss of 51 million school hours (U.S. Department of Health and Human Services 2010). Maserejian et al. (2008) found rural children from Maine had a greater prevalence of untreated tooth decay compared to children from urban Boston. Further research is needed to establish the oral health status of rural children in America.

Moreover, oral diseases can produce undesired physical manifestations, intolerable pain, and have subsequent interference with basic functions such as eating and speech (U.S. Department of Health and Human Services 2010). Oral illness can result in a reduced quality of life, social interaction, as well as negative self-esteem (Ahm et al. 2011). Chronic oral infections have also been associated with chronic diseases such as diabetes and heart disease (U.S. Department of Health and Human Services 2010).

Delaying diagnosis and preventative measures can also contribute to increased emergency room visits by rural residents with associated costs to society. For patients who lack access to regular dental care, federally funded emergency rooms may serve as a primary source of care, since patients cannot be denied evaluation (Graham et al. 2000). Estimated costs for the U.S.'s dental health services in 1998 amounted to \$53.8 billion dollars, 4.7% of the U.S.'s total health expenditures (U.S. Department of Health and Human Services 2010). While these numbers are not solely derived from rural populations, several social conditions surrounding rural areas increase the challenges to accessing dental health care.

Overall, the rural implications of these findings are limited. Higher rates of chronic diseases, disability, dental caries, and unhealthy behaviors such as smoking present in rural populations coupled with reduced dental workforce and dental health service utilization might propose greater oral health consequences for rural communities. However, these factors only

suggest that there are inadequacies in the current oral health system and that further investigation is needed to identify oral and systemic health consequences in rural areas.

CAUSES OF LIMITED OR NO ACCESS TO DENTAL HEALTH CARE

As presented in Figure 1, limited access to dental health care can be accounted for on the level of the patient, community, dental provider, and system. Individual knowledge, perceptions of one's need for oral health care, financial concerns, and cultural preferences can influence patients' pursuit of oral health care. Geographic obstacles and availability of transportation as well as patient perception of travel obstacles also determine access to dental health services.

The ability to pay for dental health services can affect access to care on the level of patient, provider, and system. As rural populations may experience greater poverty, it is not a large surprise that they experience lower rates of private insurance dental coverage, increasing their dependence on publically available insurance (Skillman et al. 2010). For dental providers, the reimbursement rate from both public and private insurances is typically lower in rural areas (National Rural Health Association 2005). In Chippewa County in rural Wisconsin, as a result of rural dentists feeling they were unfairly reimbursed, dentists decreased their participation in Wisconsin's Medicaid program. Over a ten-year period, Chippewa County gained no new dentists. Furthermore, of the twenty dentists still practicing in the area at the time, most were trying to sell their dental practices (Fish 2009).

Insurance reimbursement rates and the quantity of dental providers accepting Medicaid or Children's Health Insurance Program further limits the distribution of dental providers in rural areas. The distribution of the dental workforce can be influenced by geographical obstacles in rural areas, distance between dental practices and rural residents, as well as personal preferences for dental providers. In the United States, approximately 47 million people live in Dental Health

Professional Shortage Areas (D-HPSA), with the majority residing in rural areas (Ahm et al. 2011). Figure 2 shows the geographical distribution of D-HPSA populations by income, Medicaid eligibility as well as other factors existing in the United States. After adjusting data for population density and income, a study comparing the rural area distribution of dental providers to larger metropolitan areas, found most rural counties to have 29 dentists per 100,000 population in comparison to the 62 dentists per 100,000 population noted in large metropolitan areas (National Rural Health Association 2005).

THEORETICAL FRAMEWORK

In examining the causes of health outcomes, Northridge (2003) identifies social determinants of health outcome on several levels from the individual, micro/interpersonal, meso/community, and the broader macro/fundamental level. To understand underlying causes, Figure 1 presents several factors of dental health care access existing on various levels ranging from the individual patient to system-based causes. By adjusting social conditions of health inequalities such as access to dental health care, health intervention may occur on a larger population scale, rather than solely altering the attitudes or health behaviors of the individual.

Krieger (2008) furthers this model, stating causes can interact simultaneously, “intermingling...ecosystems, economics, politics, history, and specific exposures and processes at every level, macro to micro, from societal to inside the body” (Krieger 2008). This perspective allows the accountability of dental health care access to disseminate across to institutions, policy makers, health providers, communities and individuals as well as scientists gathering the research that investigates various causes limiting access to dental health care.

CONCLUSION

In rural populations, barriers to accessing dental health care may exacerbate oral health problems by delaying preventative and curative dental health services, leading to greater health concerns and societal costs. Multiple causes exist and simultaneously interact to influence uneven or limited access to dental health care services. Likewise, continual assessment and modification should occur at all levels contributing to dental health care access. Without a doubt, each rural community will vary in its culture, health behaviors, oral health, and access to dental health care. Appropriately, further investigation can identify shared characteristics for developing and implementing effective, cost-efficient interventions generalizable to rural communities. Acknowledging social causes and distributing accountability allows the diverse participation of constituencies, strengthening efforts to address health inequalities in rural areas. Oral health has the potential to be forgotten beside other health needs. However, its contribution to overall health reinforces the importance of oral health. Access to care strategies can occur on the local, state, and national level. By working with communities, rather than simply for communities, interventions can lead to sustainable oral health improvement.

References

- Ahm, SangNam, James N. Burdine, Matthew Lee Smith, Marcia G. Ory, and Charles D. Phillips. 2011. "Residential Rurality and Oral health Disparities: Influences of Contextual and Individual Factors." *Journal of Primary Prevention* 32(1): 29-41. Retrieved February 16, 2011. (<http://www.springerlink.com/content/a550430326177776/>)
- Fish, David. 2009. "Filling a Dental Void in Rural Wisconsin." *Health Executive* 24 (5): 50, 52.
- Fos, Pete and Linnae Hutchinson. 2003. "The State of Rural Oral Health". *Southwest Rural Health Research Center*. Retrieved March 7, 2011. (<http://www.srph.tamhsc.edu/centers/rhp2010/10Volume1oralhealth.htm>)
- Graham, Debbie B., Michael D. Webb and Sue Seale. 2000. "Pediatric Emergency Room Visits for Nontraumatic Dental Disease." *Pediatric Dentistry* 22(2): 134-140. Retrieved March 14, 2011.
- Krieger, Nancy. 2008. "Proximal, Distal, and the Politics of Causation: What's Level Got to Do With It?" *American Journal of Public Health* 98(2): 221-230. Retrieved January 19, 2011. (<http://ajph.aphapublications.org/cgi/content/full/98/2/221?view=long&pmid=18172144>)
- Maserejian, Nancy Nairi, Mary A. Tavares, Catherine Hayes, Jennifer A. Soncini, and Felicia L. Tractenberg. 2008. "Rural and Urban Disparities in Caries Prevalence in Children with Unmet Dental Needs: The New England Children's Amalgam Trial." *Journal of Public Health Dentistry* 68(1): 7-13. Retrieved February 13, 2011. (<http://onlinelibrary.wiley.com/doi/10.1111/j.1752-7325.2007.00057.x/full>)

National Rural Health Association. 2005. "Meeting Oral Health Care Needs in Rural America."

NRHA Policy Brief. Retrieved March 20, 2011.

(<http://199.237.254.34/advocacy/sub/PolicyBrf.html>)

Northbridge, Mary E., Elliott D. Scalar, and Padmini Biswas. 2003. "Sorting Out the

Connections between the Build Environment and Health: a Conceptual Framework for Navigating Pathways and Planning Healthy Cities". *Journal of Urban Health*, 80(4): 556-568. Retrieved January 30, 2011.

(<http://www.springerlink.com.ezproxy.library.wisc.edu/content/b755j748t57t631r/fulltext.pdf>)

Skillman, Susan M., Mark P. Doescher, Wendy E. Mouradian, and Diane K. Brunson. 2010.

"The Challenge to Delivering Oral Health Services in Rural America." *Journal of Public Health Dentistry* 70: S49-S57. Retrieved February 17, 2011.

(<http://onlinelibrary.wiley.com/doi/10.1111/j.1752-7325.2010.00178.x/full>)

U.S. Department of Health and Human Services. 2000. "Oral Health in America: A Report of the Surgeon General". Retrieved February 15, 2011.

Appendix

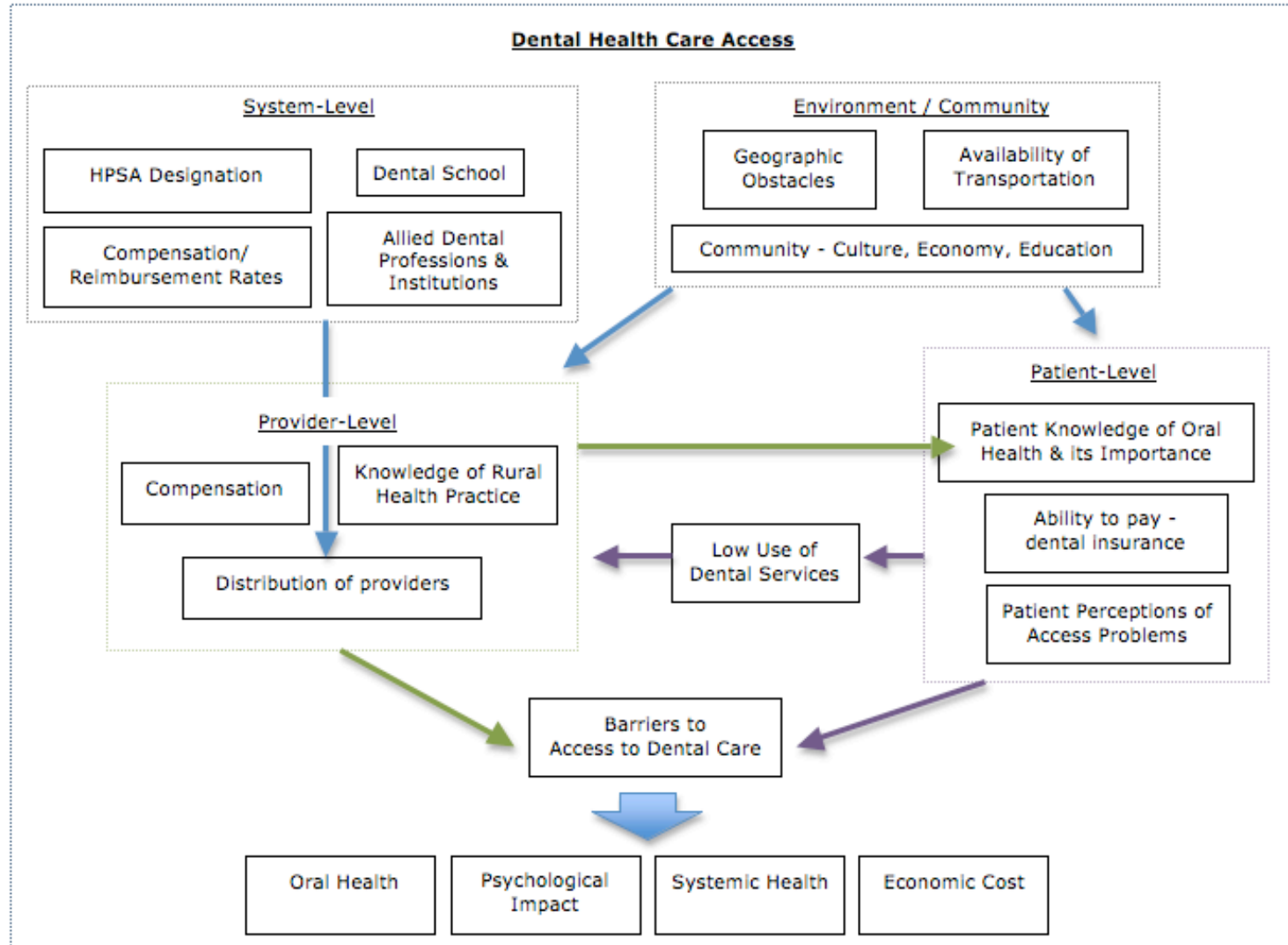


Figure 1. Barriers to Accessing Dental Health Care. Barriers to accessing dental health care can occur on the level of the patient, dental provider, environment or community, and overarching health system. These barriers can continue to influence other barriers of access to care that can ultimately lead to individual and societal consequences.

Health Professional Shortage Areas (HPSA) - Dental Health Designated Populations

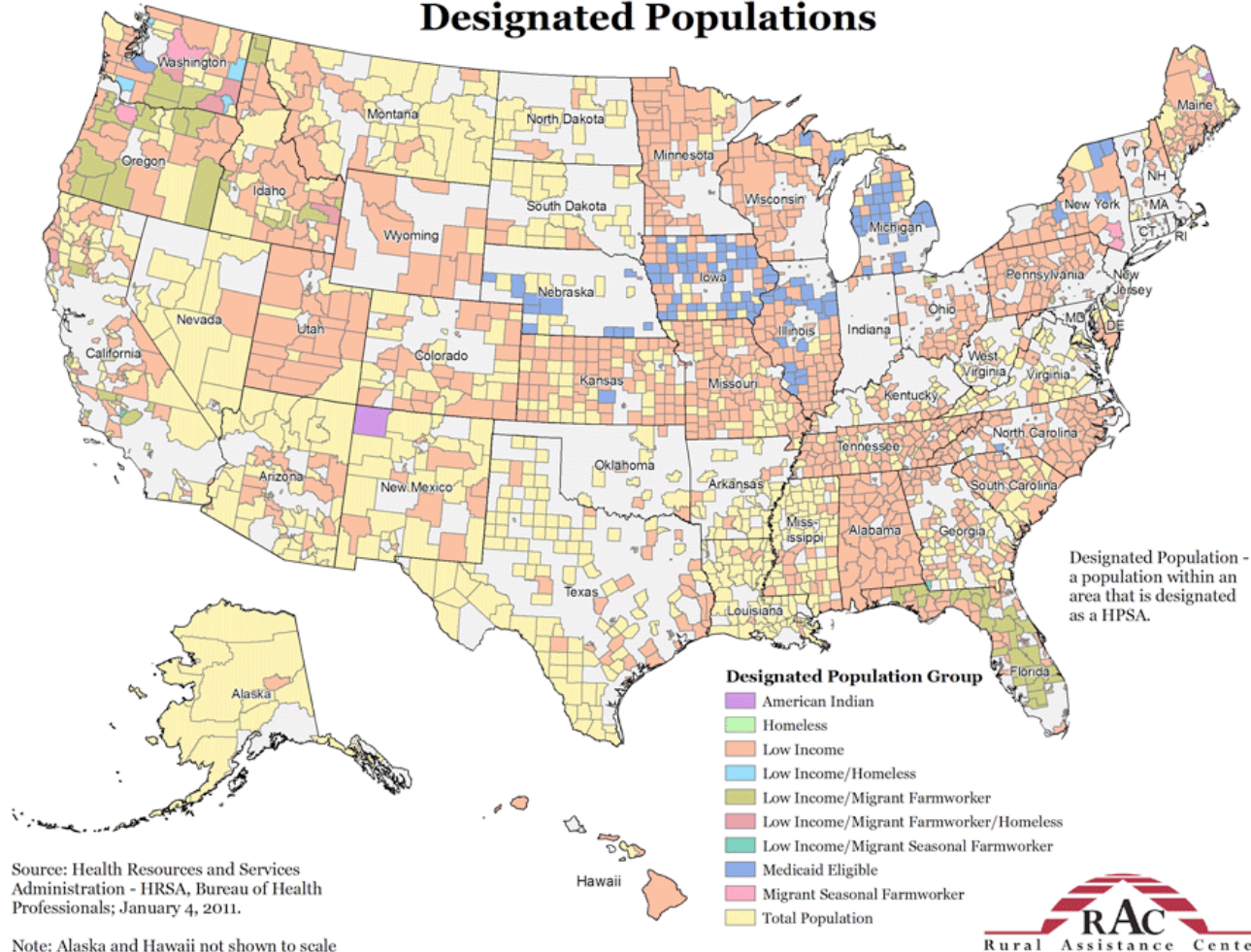


Figure 2. Health Professional Shortage Areas (HPSA) - Dental Health Designated Populations. Various HPSA designated populations groups organized by low income, homelessness, migrant or seasonal farmworker status, Medicaid eligibility, or of American Indian ethnicity that experience a shortage of dentists within the United States. Rural Assistance Center. 2011. *Health Professional Shortage Areas (HPSAs) & Medically Underserved Areas/Populations (MUAs/MUPs)*. Retrieved March 2, 2011 (<http://www.raconline.org/maps/#hpsa>)