Commentary

Reaching Rural Patients through Otolaryngology Visiting Consultant Clinics

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Abstract

Providing otolaryngology care to rural populations is a major challenge. In this study, we focus on rural outreach by the otolaryngology workforce in Iowa, a state with a high proportion of rural residents. Using data from 2013, we find that almost half (46%) of Iowa-based otolaryngologists participate in outreach. Along with colleagues from adjoining states, Iowa otolaryngologists staffed more than 2100 in-person clinic days in 76 mainly rural sites. This system of rural outreach has expanded access from 20 to 85 of the 99 counties in Iowa. These efforts improve access for more than 1 million residents out of a total population of 3 million. However, this improved level of access comes at a cost as visiting otolaryngologists drove an estimated 17,000 miles per month. This established approach to serving rural patients may be negatively impacted by changes under the Affordable Care Act.

Keywords

otolaryngology workforce issues, physician shortage, rural outreach, geographic access, health care reform.

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In a recent study of rural access to care, Winters et al1 called on urban-based otolaryngologists to establish voluntary “medical missions” to underserved rural areas of the United States. This proposal sprang from their findings that the number of otolaryngologists per capita was significantly lower in rural counties than in urban counties. Furthermore, the proportion of uninsured and Medicaid patients was significantly higher in rural counties. While a laudable idea, the domestic “medical mission” concept ignores an existing, but understudied, system of rural outreach via visiting consultant clinics (or VCCs).2 Currently, there is scant research on rural outreach by otolaryngologists. Recent studies show that outreach by urologists3 and other specialists significantly increases access for rural patients. Therefore, it may be useful to understand the extent of otolaryngologists’ involvement in rural outreach and the effects of these activities on patient access to care in their local communities.

In this study, we examine otolaryngology VCCs in Iowa utilizing a unique database documenting their location and frequency. Using data from 2013, we estimate the average and total travel distances for all visiting otolaryngologists. Using census-tract level data, we also estimate how VCCs impact average travel times for patients.

The Problem of Rural Access

The size and geographic distribution of otolaryngologists has been an issue for several years.4-6 Overall, the ratio of otolaryngologists per 100,000 in population may have peaked in 2006.5 Furthermore, from 2000 to 2009, the number of otolaryngology residents being certified by the American Board of Medical Specialties dropped almost 20%.5 Based on current trends, there may be a major shortfall in the supply of otolaryngologists within 10 years.6 For a number of reasons, this potential shortfall is likely to impact rural populations more dramatically. First, rural areas of the United States are less likely to have a local otolaryngologist,1 and second, their average age is higher.5 New graduates are more likely to choose an urban-based group practice.5 Second, while the overall demand for otolaryngology services is expected to grow due to the aging of the population,7 the population of rural America is aging more rapidly than in urban areas. At the same time, rural residents in general report higher levels of smoking and obesity than residents of urban areas,8 further increasing the need for otolaryngology care for the 62 million Americans living in rural areas.

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Finally, changes under the Affordable Care Act (ACA) will bring previously underinsured and uninsured patients into the health care system, many of whom live in rural areas. Therefore, newly covered patients from rural areas may continue to have difficulty accessing care from otolaryngologists in their own communities.

## Otolaryngology Visiting Consultant Clinics in Iowa

There are at least 2 options for extending otolaryngology care into rural areas. The first is telemedicine. This study focuses on the second option: the visiting clinical consultant model. In this approach, an otolaryngologist schedules regular visits to a rural site, usually a community hospital. During these clinics, the visiting otolaryngologist consults with patients and their primary care practitioners. In hospital-based clinics, imaging and other diagnostic procedures may be performed. While rural patients are still likely to have to travel to larger urban areas for surgical procedures, both preoperative workups and postoperative care can be provided in the patient’s local community.

The distribution of clinic days shows a high proportion of days were in small rural towns (61%), followed by isolated rural areas (21%) and large rural cities (14%). Only 4% of clinic days were held in sites located in urban areas.

A high proportion of otolaryngology VCCs (86%) were staffed by Iowa physicians (65 sites). Iowa physicians staffed an estimated 1740 clinic days (83% of the total). Data from the IPIS show that 38 otolaryngologists from Iowa participated in a VCC in 2013. Eleven otolaryngologists from Nebraska, South Dakota, Missouri, and Wisconsin also staffed otolaryngology VCCs in Iowa in 2013. Based on the overall number of otolaryngologists practicing in Iowa in 2013 (N = 83), a high proportion (46%) are involved in rural outreach activities.

Figure 1 contains a map of the primary practice sites and VCC sites in 2013. This map shows the locations of the VCCs and the primary practice locations of the participating otolaryngologists.

The median 1-way (estimated) driving distance for all otolaryngologists participating in VCC activity is 41.3 miles. For non-Iowa physicians, the comparable figure is 56.5 miles. In total, otolaryngologists drive more than 17,000 miles per month to provide care in rural areas of Iowa.

## Effects of Rural Outreach on Patient Access

We computed the minimum travel time between every census tract in Iowa and the primary practice location of the nearest otolaryngologist in Iowa or an adjoining state. Next, we estimated the travel times from all Iowa census tracts for a combined set of treatment locations, namely, primary practice locations and VCC locations.

To assess the potential impact of access to otolaryngology services at the population level, we used the census tract data to compute the cumulative proportion of the population in the state of Iowa that resides within a 10-, 15-, 20-minute (etc) drive of the primary practice location of the closest otolaryngologist including those from adjoining states. These results are presented in Figure 2.

We see that 59% of the population resides in census tracts within a 20-minute drive of a primary practice location of an otolaryngologist. This is consistent with the 2010 census results showing that about 60% of Iowa’s population lives in urban areas.

We contrast these results with those considering the locations of otolaryngology VCCs (also in Figure 2). We see that the percentage of the population living within a 30-minute drive of any otolaryngology VCC site is 92%.
Due to otolaryngology VCCs, an additional 33% of the population lives within a 30-minute drive of an otolaryngologist. Based on a population of about 3 million people, this translates to more than 1 million rural residents of Iowa having better access to otolaryngology care.

The otolaryngology VCCs in Iowa may be thought of as the importation of specialist physician services into underserved areas. Due to travel time, we might assume that a VCC day provides 5 hours of contact between the otolaryngologists and patients or their primary care physicians. In 2013, visiting otolaryngologists are providing about 10,545 hours of care in communities outside their primary practice locations. Based on a 2080-hour work year, this translates to an average of 5.1 FTE otolaryngologists.

It is interesting to note how well the current VCC system allocates otolaryngology care to rural areas. A total of 20 counties in Iowa (20.2%) had a resident otolaryngologist in 2013 (of these, 6 counties were served by a single otolaryngologist). This number expands to 85 counties (of a total of 99 in the state) when otolaryngology VCCs are considered. Of course, a resident otolaryngologist in an otherwise unserved rural county would provide more access than the current VCCs do. However, there may not be sufficient patient volume for such a rural practice to survive.

**Conclusion**

This study has a number of limitations. We focused on the involvement of otolaryngologists in rural outreach in a single state. There may be circumstances specific to Iowa such as geography or the medical insurance environment. Furthermore, we did not evaluate the quality of the medical care provided by visiting otolaryngologists or its effect on outcomes.
This study attempts to fill a significant gap in the literature about otolaryngology outreach in rural areas. While much has changed regarding insurance coverage for uninsured and underinsured patients in rural areas, the challenges of providing access to otolaryngology care remain. In Iowa, an extensive system of rural outreach involving more than 50 physicians provides regular access to otolaryngologists in rural communities. The question at this point is how the ACA will affect this established system of rural outreach.

Overall, the ACA seeks to expand access to quality medical care to vulnerable populations, including the rural elderly. However, provisions of the ACA may have a profound negative effect on the current way otolaryngology care is provided to rural patients. For example, the additional travel costs (and opportunity costs) incurred by visiting otolaryngologists are not reimbursed. In addition, future bundling of payments may not support the costs of providing access to an otolaryngologist in the rural areas where an increasing number of patients live and may prefer to receive care.

Changes due to demographics and insurance coverage are likely to increase the demand for otolaryngology care in rural communities. It seems reasonable to understand the current system of care before widespread changes are made that may affect rural patients’ access to otolaryngologists.

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Author Contributions

Thomas S. Gruca, study design, drafting manuscript, final approval, and agree to be accountable for this work; Inwoo Nam, study design, critical review of manuscript, final approval, and agree to be accountable for this work; Roger Tracy, data acquisition, critical review of manuscript, final approval, and agree to be accountable for this work.

Disclosures

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