

A Survey of Rural Ethics Teaching in North American Allopathic and Osteopathic Medical Schools

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INTRODUCTION

In 2010, the World Health Organization (WHO) released *Increasing Access to Health Workers in Remote and Rural Areas Through Improved Retention: Global Policy Recommendations*, a report on strategies for increasing and retaining health care workers in rural regions. The report states that while 50 percent of the world's population lives in rural areas, only 38% of the nursing and less than 25% of the physician workforce serves these regions. For the United States, the WHO states that 20% of the population lives in rural regions and only 9% of registered physicians practice in such areas. Among the solutions the WHO offers is contextualizing medical education. In other words, medical students should be drawn from rural populations, trained through rural community experiences, and taught using rural health specific situations: "Revise undergraduate and postgraduate curricula to include rural health topics so as to enhance the competencies of health professionals working in rural areas, thereby increase their job satisfaction and retention" (WHO 2010, 3; Barrett, Lipsky, and Lutfiyya 2011). This, strategy suggests physician success and satisfaction in rural practice requires training using rural-specific cases, knowledge, and experience.

In parallel to the need to increase rural clinical experience, there is a need to better understand the unique ethical issues that arise in the rural environment. A growing rural ethics literature points to an emerging awareness of

the special ethical considerations inherent to clinical practice in these closely-knit, tightly interdependent small communities, as well as the need to develop ethical resources for these providers. According to Nelson, et. al. the “rural context significantly impacts the common health care ethical conflicts including confidentiality, boundary issues, shared decision-making, professional-patient relationship, and allocation of resources for a significant portion of our population” (Nelson et al. 2006, 45). For example, there may be unique challenges to patient privacy when patients are also the physician’s neighbors, friends, children’s teachers, and relatives (Klugman and Dalinis 2008; Nelson 2010; Nelson 2010; Nelson, Greene, and West 2010; Nelson and Schmidek 2008).

In the *Encyclopedia of Bioethics*, Dan Callahan wrote that bioethics has evolved into four areas of general inquiry including what he calls cultural bioethics, which, “refers to the effort systematically to relate bioethics to the historical, ideological, culture and social context in which it is expressed” (Callahan 2004). John Hardwig has also asserted that mainstream bioethics is focused on urban issues (Hardwig 2006). In the last decade, a cultural bioethics subfield of “urban bioethics” has emerged that proposes “life-density, diversity, and disparity” create unique ethical challenges (Fleischman, Levin, and Meekin 2001)(Blustein and Fleischman 2004). In recognizing that there exists an urban bioethics that focuses on problems of population density, then there must also exist a correlative cultural bioethics of *rurality* that reflects a low-density population, agricultural culture, and a lack of needed health care resources. “To date, there exists a limited focus on rural healthcare ethics shown by the scarcity of rural healthcare ethics literature, rural ethics committees, rural focused ethics training and research on rural ethics issues” (Nelson et al. 2007). For instance, a national study noted that 40% of critical access hospitals do not have ethics committees to assist rural clinicians with ethics conflicts compared to almost 100% of hospitals with over 400 beds (Fox, Myers, and Pearlman 2007; Nelson et al. 2010).

While Nelson et. al. have made a call for increased training in ethical issues in rural contexts, there is no information available regarding whether physician education programs currently teach in this area (Nelson et al. 2007). To empirically assess the prevalence of rural medical and ethics education for medical and osteopathic students, the researchers constructed a comprehensive survey.

Methods

The *Rural Medical Ethics Information Survey* employed yes/no, multiple choice, and fill-in-the-blank questions drawn from the literature and from recommendations by the Rural Health Care Ethics Working Group – a group of rural medical educators and ethicists. The University of Texas Health Science Center San Antonio Institutional Review Board determined the survey to be exempt in June 2010. In Fall 2010, the researchers sent a recruitment email to all 133 U.S. member schools of the Association of American Medical Colleges (AAMC), and all 26 members of the American Association of Colleges of Osteopathic Medicine (AACOM). The emails were directed to the senior medical/osteopathic education official at each institution, asking them to either complete a survey on *SurveyMonkey* or to forward the

survey link to someone within the organization who could appropriately respond (SurveyMonkey 2011). For schools that did not complete the survey, an email reminder was sent 3 weeks later. For schools that still did not complete the survey, a third email reminder was sent 4 weeks after that.

The researchers asked whether the school had a required or elective rural experience and the form of that experience. The officials were also queried as to whether they offered training specifically in rural health care ethics. Other information collected included demographics such as number of students in the student body, percentage of students originally from rural areas, the zip code of the school, and its self-identified distance from an urban center (i.e. the “rurality” of the location).

The mainly descriptive statistical analysis was performed with exploratory tests of association. Binary responses (yes/no items) were summarized by proportions, and their 95% confidence intervals (CIs) were constructed with the exact binomial method. These CIs can be constructed when there is no variation in the response (All yes or all no) and are conservative for small sample sizes especially in the finite population setting. The CIs for differences in proportion were based upon asymptotic assumptions. Non-responses were considered to be “no.” Associations between binary and unordered categorical responses were tested using Fisher’s exact method. Associations with ordered categorical responses (Distance to Urban) were tested using a permutation-based method (H. and C. 1999). Associations between binary outcomes and continuous variables (% Rural Residency) were tested using logistic regression. Correlations between continuous variables were tested with the Spearman Rank correlation test. The level of significance was chosen to be $P = .05$ with 2-sided alternatives. We conducted the analysis with the R statistical software (R Development Core Team 2006) and the “coin” R package (Hothorn et al. 2008). The authors created the summary tables with SAS software (SAS Institute Inc 2008).

Results

Of the 159 schools surveyed, 124 completed the questionnaire (70.4% response rate). Of those, 16 identified as osteopathic schools (DO), 62 as allopathic (MD) and 46 did not offer a disciplinary identity. The researchers asked schools to classify their geographic location. Fifty-nine (47.6 %) indicated an urban location (0-5 miles from urban core), 3 (2.4 %) as suburban (6-20 miles from urban core), 3 (2.4 %) as exurban (21-50 miles from urban core), 8 (6.5 %) as rural (51 or more miles from urban core) and 51 (41.0%) did not respond to this question. Since 73 schools also reported their zip code, this information was used to identify the schools Rural Urban Commuting Area Code (RUCA) classification (United States Department of Agriculture Economic Research Service 2005). Of these 73 schools, the mean RUCA code was 1.1 with a standard deviation of 0.5, meaning high-density development.

As Table 1 demonstrates, the researchers asked schools if they require a rural experience of all students. Thirty-two schools (29.4%) indicated that they had such a requirement. Additionally, many schools offer rural education tracks that may be required only of a specific subset of students. Some of these specialty tracks only accept students from rural areas while other tracks are intended for students who plan to practice in rural regions. Six schools (12.5%) require a rural experience only for students in these specialty programs. Sixty-two schools (61.4%) offer some form of an elective rural experience for their students. Schools that had required a rural educational experience for all or some of their students often also offer a rural elective experience, thus the categories are not mutually exclusive.

Only 7 (21.9%) of the 32 schools that require a rural experience for all students also teach rural health care ethics. Table 2 indicates that only 25 of the 32 schools with required rural experience answered this question. In the 6 schools with a rural specialty track, 4 (66.7%) teach rural health care ethics. In regards to the 64 schools with a rural elective, only 24 responded to the question, "Does your elective program in rural medicine include rural-focused ethical issues?" Eleven of those 24 (45.8%) indicated that they teach rural health care ethics.

Discussion

Less than 1/3 of schools require a rural experience of all students. Of those, only 1 in 5 offer a rural ethics curriculum. Of the 61.4% of schools that offer a rural elective, 17.7% of those offer training in rural ethics issues. However, in schools where a rural experience was required of a subset of students, 61.4% of those schools required rural health care ethics. Thus, schools that require ethics experiences of a subset of students may be more likely to have rural ethics training because of their focused mission. Or since these schools have a larger draw from rural areas, those students may demand the rural ethics focus in their training.

In looking at the effect of geographic location on rural ethics teaching, the authors initially planned to rely on RUCA codes, which are created by the federal government to map areas of urbanity and rurality. However, although 8 schools self-identified as rural (defined on the survey as more than 50 miles from an urban center), the median 1.1 RUCA code for all schools shows that the self-report and the RUCA codes did not always match. For example, The Geisel Medical School at Dartmouth is located 125 miles from Boston in a pastoral area of New Hampshire. The population density for the town of Hanover, NH is 1,792 people per square mile meaning that the RUCA code is 1, or urban, while the average density for New Hampshire is 146.8 (RUCA codes 7 to 10). The presence of a medical school requires a certain density of people that may give the area an urban RUCA code even though the setting is rural. Therefore, RUCA codes were not useful in looking at geographic location of a medical school and the researchers relied more on self-reports, a less objective measure.

The authors note several limitations and insights regarding this study. Many schools skipped large sections of the survey. For instance, nearly 41% of all respondents did not indicate their zip code. The survey may have been too detailed, requiring too much time for a senior education officer to complete. Additionally, few schools answered questions about hours of instruction, percent of students hailing from rural areas, and percent of graduates who go to residency in rural regions. Those that did answer often indicated they were making guesses, raising questions of the validity of those responses and thus they were excluded from analysis.

CONCLUSION

The survey results provide an enhanced understanding of the limited rural focused medical training programs in the United States. The survey results also indicate how rural ethics issues do not receive a great deal of attention in medical education. Both of these may contribute to the minority of graduating students choosing to practice in rural settings. The authors believe that following the World Health Organization's goal of increasing rural health care workforce requires medical training experiences in rural settings including attending to the ethical challenges faced by physicians practicing in such geographic locations and cultural spaces. Drawing on Callahan's perception of the importance of cultural bioethics, rural bioethics should be part of rural practice experience and medical school curricula, to give students the information and skills needed in rural settings.

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