Student and Resident Education and Rural Practice in the Southwest Indian Health Service: A Physician Survey

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Background and Objectives: The Indian Health Service (IHS) is an educational rotation site for numerous medical students and residents. These IHS rotations may be an important factor in recruitment and retention of physicians to the IHS. We describe the combined number of student/resident rotations in the Southwest IHS and their influence on recruitment and retention. We also analyze factors related to choice of rural practice in the IHS. Methods: We conducted a survey of clinical directors and IHS physicians in Arizona and New Mexico. Results: Twenty (87%) clinical director surveys and 289 (66%) physician surveys were returned. More than 400 students/residents participate in rotations annually in the IHS in Arizona and New Mexico. Eighty-four percent of clinical directors feel that educational programs are important to recruitment. Forty-five percent of current IHS physicians participated in IHS rotations as students or residents, and 87% feel that rotating influenced their decision to join the IHS. Eighty percent of IHS physicians who teach feel that working with students and residents improves their job satisfaction. Seventy-five percent of respondents practice in rural areas. Rural medical student and resident rotations are associated with subsequent rural practice. Conclusions: Many medical students and residents rotate in the Southwest IHS. Clinical directors state that these rotations are helpful to recruitment, and IHS physicians who rotated feel it was important in their decision to join the IHS. IHS clinicians feel that teaching improves job satisfaction.

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Student and resident rotations may also play a significant role in physician retention in the Indian Health Service. Professional development has been described as important to IHS physicians, and IHS physicians have rated teaching of students as valuable to their professional lives. Clinical directors have indicated that teaching is satisfying and that “by keeping staff stimulated and involved, [teaching] is a significant retention tool.”

**Benefit of Student/Resident Rotations to Physician Recruitment and Retention in Rural, non-IHS Settings**

Many non-Native rural communities also face challenges in recruiting and retaining physicians. Factors influencing recruitment to rural practice and physician choice of rural practice in non-IHS settings include the following: rural background, scholarship obligation, and physician’s student/resident rotation experience in a rural area. As with their IHS colleagues, rural physicians have consistently rated teaching of students as valuable to their professional lives.

**Study Objectives**

We surveyed IHS clinical directors and physicians at IHS sites in Arizona and New Mexico to learn more about student/resident teaching and rural practice. Our study is the first multi-Area, large-scale survey of its kind. Our objectives were (1) to quantify current IHS medical student/resident teaching activities in the Southwest, (2) to determine the value of these rotations to recruitment, (3) to determine the value of teaching to physician satisfaction and, therefore, to physician retention, and (4) to describe IHS physicians’ demographic characteristics related to choice of rural practice. The Phoenix Area IHS Research Committee (IRB) approved the study.

**Methods**

We distributed two different surveys in July and August of 2004 at 23 service units in the four Arizona/New Mexico Indian Health Service Areas: Albuquerque, Navajo, Phoenix, and Tucson. Clinical directors answered the first survey. Clinical directors distributed the second survey to each permanent MD/DO staff physician who worked at least half time. The number of physicians at each service unit varied from 2 to 84. Seven large service units (≥20 physicians), seven small service units (<10 physicians), and nine medium-sized service units (between 10 and 20 physicians) were included. E-mail reminders were sent prior to the survey deadline.

**Survey Content**

The clinical director survey included questions about years of experience, the nature of student/resident programs at their service units, and perceived importance of a student/resident program to recruiting. The physician survey consisted of questions in three general areas. The first group of questions asked for board-certified specialty and years of IHS experience. The second group of questions asked whether the physician had participated in an IHS student or resident rotation, the influence that rotation had on the physician’s choice to join the IHS, whether the physician is currently involved in teaching, and how teaching influences the physician’s job satisfaction. The final group of questions looked at variables associated with rural practice. Both surveys provided space for comments so physicians could include unsolicited information they felt to be relevant to the survey.

**Data Analysis**

Statistical analysis was done using the Statistical Package for the Social Sciences for Windows V.12.0.2. Cross-tabulations were done for nominal variables, and a comparison of means was done for continuous variables.

**Results**

Of 23 clinical director surveys, 20 were returned (87%). Of 436 physician surveys, 289 were returned (66%).

**Clinical Director Survey**

The average IHS tenure of the clinical directors was 11.8 years (range 1–27 years), and the average number of years as clinical director was 6.8 (range 0–20 years). Nineteen (95%) clinical directors reported that they had active student/resident teaching programs at their sites. Clinical directors estimated the total number of students/resident that rotate in the Arizona/New Mexico IHS annually at more than 400. Eighty-four percent of the 19 clinical directors with teaching programs at their service unit felt that a student/resident program is important to physician recruiting efforts (Figure 1).

**Physician Survey**

A total of 107 (37%) respondents were board certified in family medicine, 41 (14%) in pediatrics, 31 (11%) in internal medicine, 18 (6%) in obstetrics-gynecology, 8 (3%) in emergency medicine, and 10 (3%) in general surgery. Other specialties included pediatrics-internal medicine, psychiatry, orthopedic surgery, pathology, ophthalmology, otolaryngology, and anesthesia. Forty-one (14%) respondents were either not board certified or did not indicate a board-certified specialty. The average IHS tenure of the respondents was 7.5 years, with an average of 5.8 years at their current service unit.

**Student/Resident Rotations**

Seventy-two (25%) current IHS physicians responding to the survey had participated in a student rotation with the IHS, 93 (32%) rotated in the IHS as a resident,
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and 130 (45%) rotated as a student and/or resident. The number of physicians who rotated in the IHS varied by service unit. At one medium-sized service unit, only 15% had rotated in the IHS, while at another medium-sized service unit, 71% had participated in an IHS rotation. There are five service units (26%) in Arizona/New Mexico where greater than 65% of physicians rotated in the IHS as a student and/or resident.

Most physicians who rotated with the IHS as a student and/or resident felt that the experience was important to their decision to join the IHS. Eighty-six percent agreed or strongly agreed with the statement, “A student or resident rotation in the IHS influenced my decision to join the IHS as a practicing physician” (Figure 2). Many of the physicians who disagreed commented that they had already decided to join the IHS prior to the rotation. Comments by physicians regarding the importance of their student/resident rotation included: “I probably would not have come to work at an IHS facility if it were not for the great experience I had as a resident,” and “I would not have considered my current job had I not done an IHS rotation.”

IHS physicians in Arizona and New Mexico indicated that they are actively involved in teaching. A total of 227 (80%) physicians teach students or residents in their current position. Eighty percent of these clinicians feel that working with students and residents increases their satisfaction at work (Figure 3). While most physician comments about working with students/residents were positive, numerous comments echoed the feeling of one respondent, who stated, “The only major downside to teaching residents and students is not being given enough time to do it well.”

The physicians who do not currently teach students/residents were asked to comment on the following statement: “I feel working with students and residents would increase my satisfaction at work.” Twenty-one (43%) agreed or strongly agreed, 19 (39%) felt neutral, and nine (18%) disagreed or strongly disagreed.

Factors in the Selection of Rural Practice

Table 1 details physician responses to seven questions about rural practice. We compared non-rural IHS physicians to those who live and/or work in a rural area. Both medical student and resident rural rotations were found to correlate with later rural practice. Of the IHS physicians who rotated in rural practices as medical students, 80% are now practicing in rural communities. Of the IHS physicians who did not rotate in rural practices as medical students, 67% are now practicing in rural communities. This difference is statistically significant ($P = .01$). Of those who rotated in rural communities as residents, 82% are now practicing in rural communities, while 69% of those who did not participate in rural rotations as residents now practice in rural communities ($P = .01$). Of those who rotated in rural areas as medical students, 66% now live in rural communities, while 53% of those who did not participate in rural rotations now live in rural communities ($P = .04$).

The characteristics of the scholarship-obligation physicians were similar in all respects to non-scholarship physicians, although scholarship physicians had a slightly higher average number of years of service (8.2 years compared to 7.3 years). This result was not statistically significant at $P < .05$. 

IHS—Indian Health Service
Rural upbringing, scholarship obligation, and internship/residency with a rural focus were not found to correlate with subsequent rural practice or rural primary residence in our survey. Additionally, an IHS rotation as a student or resident does not correlate with future choice of rural primary residence or rural practice.

Additional comments offered by physicians regarding their reasons for selecting rural practice in the IHS focused on the following themes: desire to care for the underserved, desire for a broad scope of practice, avoidance of the “hassles” of private practice, the opportunity to experience Native American culture, “slower pace,” availability of outdoor activities, family life, and lifestyle issues.

Discussion

Our survey finds that sites providing health care to Native Americans in Arizona and New Mexico are actively involved in student and resident teaching, with more than 400 learners rotating annually. We also demonstrate that almost half (45%) of all current IHS physicians in Arizona and New Mexico rotated as a student and/or resident in the IHS. This is consistent with the findings of Bartline, who noted that 53% of Alaska Area physicians had completed such a rotation. Additionally, the importance of these rotations to recruitment is underscored by our findings that clinical directors overwhelmingly feel that student/resident rotations are important to recruitment and that most physicians who completed such a rotation feel it was important in their decision to join the IHS. Our survey supports previous findings that suggest contact with IHS facilities and personnel is important in recruitment efforts.

As noted by Kim, retention of physician staff, in addition to recruitment, is an important factor in the stability and quality of health care for Native Americans. Our survey found that 80% of IHS physicians are involved in teaching. Most feel that teaching adds to their job satisfaction. Bartline noted that many physicians felt that the removal of learners from their practice would restrain their professional growth. In a survey of obstetricians in a remote medical community, Hanson found that job satisfaction is improved by teaching. Comments from our surveyed physicians are consistent with Hanson’s finding that the greatest concern of community teachers is the lack of dedicated teaching time.

Because much of the care provided to Native Americans in the Southwest is in rural areas, we examined some of the factors related to the selection of a career in rural health. Consistent with previous findings, our survey indicates that rural medical student and resident rotations are associated with choice of rural practice. Thirty-three percent of IHS physicians reported a rural upbringing. This is consistent with other studies, which have reported a similar portion of rural physicians with rural backgrounds. Despite the signifi-

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<tr>
<th>Question</th>
<th># (% Answering “Yes”)</th>
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<tbody>
<tr>
<td>Do you practice in a rural community?</td>
<td>215 (75%)</td>
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<tr>
<td>Is your primary residence in a rural community?</td>
<td>174 (61%)</td>
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<tr>
<td>Did you rotate in a rural community as a student?</td>
<td>170 (59%)</td>
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<td>Did you rotate in a rural community as an intern or resident?</td>
<td>131 (46%)</td>
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<td>Did your internship/residency have a rural focus?</td>
<td>59 (20%)</td>
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<td>Was a significant portion of your upbringing in a rural community?</td>
<td>93 (33%)</td>
</tr>
<tr>
<td>Do/Did you have a scholarship obligation to practice in a rural or underserved community?</td>
<td>77 (25%)</td>
</tr>
</tbody>
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* n=289
cant number of IHS physicians with rural upbringings, this did not correlate with subsequent rural practice in our study.

IHS physicians participate in a variety of scholarship programs, including the National Health Service Corps. Most scholarships include a one-to-one repayment obligation for schooling, often requiring a 4-year payback. We find that physicians with scholarship obligations and those without scholarship obligations alike have a similar average IHS tenure of 7 to 8 years. This tenure is considerably longer than the 4-year payback obligation. This suggests that the finding of Pathman and colleagues—that National Health Service Corps scholars are poorly retained in rural areas—may not apply to the IHS.

There are several limitations to our study. The cross-sectional design of the study makes it impossible to determine whether participation in a student/resident rotation causes a decision to enter the IHS. Many rotating students and residents who choose to practice in the IHS were already likely to consider such a career prior to the rotation. Additionally, it is difficult to assess the impact of the nonrespondents in our survey. Perhaps the nonresponding physicians are less likely to be interested in teaching or, more likely, to have only been with the IHS for a short period of time. We also did not determine if physicians who completed a rotation returned to the same site for practice. This data would be helpful to an IHS site evaluating a program to improve recruitment at their own site. Distinction between student and resident rotations in our survey might also have been helpful to determine the value of each to recruitment.

Future research that prospectively evaluates learner impressions of IHS rotations in different settings and effect on career choice would add much to this discussion. A future study of the impact of student/resident rotations on patient satisfaction in Native communities would also be valuable. Confirming our findings in the IHS nationwide would add to our understanding of this important health issue. Further research in rural non-Native communities might reveal that student/resident teaching is an important recruitment and retention tool in different health care settings.

In summary, the Indian Health Service is involved in teaching many students and residents. Our survey suggests that these educational programs are valuable to Native American health care since they may improve physician recruitment and retention.

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REFERENCES