



Family Medicine  
Residency of Idaho, Inc.

# Idaho Physician Rural Work Force Assessment Phase II

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## **Idaho Physician Rural Work Force Assessment Phase II**

### **Introduction**

Family medicine workforce in rural communities is a major problem in the United States (US) health care system (Pepper, Gray & Sandefer, 2010; Rosenblatt, 2004; Rosenblatt, Andrilla, Curtin & Hart, 2006). About 19.2% of the US population resides in rural areas while only about 11.4% of US physicians practice medicine in these locations (Fordyce, Chen, Doescher & Hart, 2007). This disproportionately low number of practicing physicians in rural areas is troublesome since rural populations typically require additional health care services compared to urban communities due to lower socioeconomic status, sicker populations, access to care challenges, greater health disparities and a larger proportion of uninsured individuals (Bodenheimer & Pham, 2010; Hancock, Steinbach, Auerswald, Nesbitt & Adler, 2009). In addition, physician workforce shortages continue to increase with the overall rise of the US population, as the proportion of elderly increases, and as health care legislation factors increase access to health care services (Rabinowitz, Diamond, Markham & Santana, 2011). Timely access to primary care is paramount in the aims of the Patient Protection and Affordable Care Act (PPACA) and there is a disproportionate paucity of primary care physicians in the overall physician workforce (Green, Savin & Lu, 2013), particularly as located in rural America (Dorsey, Nicholson & Frist, 2011). Many physicians are cutting back on hours and numbers of patients seen, exacerbating the physician supply disparity (Merritt Hawkins, 2012). Illustrating this, according to a recent study “physicians are working 5.9% fewer hours than they did in 2008, resulting in a loss of 44,250 full-time-equivalents (FTEs) from the physician workforce” (Merritt Hawkins, 2012, p. 7).

The growing imbalance of supply and demand causes many rural family physicians to broaden their scope of practice to fill the void of health care services (Dresang & Koch, 2009;

Hancock et al., 2009). According to the Association of American Medical Colleges (AAMC), in 2010 there were roughly 799,509 active physicians in the US health care system (AAMC, 2011). The AAMC reports a projected shortage of roughly 124,000 active physicians by the year 2025 as well as a primary care physician shortage of about 45,000 (AAMC, 2008). Physician choice of practice has fallen further away from primary care which impacts the equality of health care in rural areas as well as health outcomes in the US health care system (Hauer et al., 2008; Jacobson & Jazowski, 2011). Medical students are deciding to follow careers in a sub-specialty field versus primary care for several reasons including: the income gap, scope of practice challenges, work environment, additional administrative tasks demands, perceived lower status level, desire for lifestyle, and decreased patient interaction due to crammed schedules (Bieck, Biggs, Crosley & Kozakowski, 2012; Bodenheimer & Pham, 2010; Steinbrook, 2009;). The income gap has been noted to be roughly a difference of \$3.5 million over a 35 to 40 year career of practicing in a sub-specialty as opposed to primary care (Phillips et al., 2009; Steinbrook, 2009). For example, a medical student deciding to be “a radiologist or an orthopedic surgeon, two of the highest paying specialties, would earn triple the income compared to that of a primary care physician” (Steinbrook, 2009, p. 2696).

Recent initiatives and reform such as the PPACA aspire to increase access to health care services to the US population. The PPACA will potentially expand Medicaid to Americans with incomes up to 138% of the federal poverty level which could add about 30 million people by 2014 (Kirch, Henderson & Dill, 2012). The PPACA intends to increase access; however this legislation acknowledges the deficit of physicians practicing in rural areas. In particular, the PPACA offers additional reimbursement of 10% in salary for family care physicians for Medicare payments and an additional 10% if they agree to practice primary care in medically underserved areas (Kaiser Family Foundation [KFF], 2010; Patient Protection and Affordable

Care Act [PPACA], 2010). These changes may help to increase access to health care for Americans while other federal and state legislative efforts exist to address physician shortages. Nonetheless, scope of practice challenges, including adequate training and preparation for practice still exist (Bodenheimer & Pham, 2010; Rabinowitz et al., 2011).

Similarity, Idaho is experiencing a physician shortage, ranking 49<sup>th</sup> in the US for physicians per capita (AAMC, 2011). According to the Association of American Medical Colleges, Idaho has the 6<sup>th</sup> oldest physician workforce in the US with about 40% of the physicians age 55 or older and about 21% of the physicians 65 or older (AAMC, 2011). In addition, Idaho's population increases have contributed to the physician shortage as Idaho was ranked 8<sup>th</sup> in the nation in growth between 1970 and 2000 (AAMC, 2011). Idaho currently does not have a medical school, however Idaho participates in the WWAMI (Washington, Wyoming, Alaska, Montana, and Idaho) and University of Utah programs. The WWAMI program offers states without a medical school positions for medical students at the University of Washington School of Medicine. The participating state funds students by paying the difference between in-state and out-of-state tuition (MGT of America, 2007). The WWAMI program provided 20 slots per year to Idaho medical students in 2012 and allows students to attend their clinical rotations throughout the state of Idaho during their third and fourth years of attendance (Norris et al, 2006). Idaho ranks in the top 10 nationally with a 51.6%-71.3% physician retention rate of graduate medical students participating in an Idaho residency program (AAMC, 2011). Even with this higher ranking, the National Resident Matching Program 2011 results indicate that Idaho is limited to 32 full residency positions annually, 20 Family Practice and 12 Internal Medicine (National Residency Matching Program, 2012). Current 2013 data indicates minimal improvement in these statistics.

Rural Idaho is lacking in sufficient rural training positions to fully address the number of patients and the broad scope of practice needed for adequate medical care in rural communities in the state. To help decrease this barrier nationally, several medical schools have offered a rural training track such as the WWAMI program's Targeted Rural Underserved Track (TRUST) (Waterman, Kost, Lazar, & Dobie, 2011). These types of programs provide undergraduate medical students a unique opportunity to spend their second and third year of medical school working in a rural clinical environment as opposed to the traditional urban hospital environment (Norris et al., 2006). A study by the Physician Shortage Area Program (PSAP) of Jefferson Medical College (JMC) Medical School indicates that those physicians studying in a rural setting will more likely continue to practice in rural practice areas (Rabinowitz, Diamond, Markham & Santana, 2013). In addition, family medicine Rural Training Track (RTT) residency programs are important in building family medicine workforce in rural areas (Patterson, Longenecker, Schmitz, Skillman & Doescher, 2011). One multi-state study has reported that 71.9% of graduating RTT residency program family medicine physicians began their clinical practices in rural areas and that 60.6% continued to practice in rural areas after three years (Patterson et al., 2013).

Along with the increasing physician shortage in Idaho and other rural areas, scope of practice is an important factor that contributes to the ultimate choice of physician location of practice (Geyman, Hart, Norris, Coombs & Lishner, 2000). Oftentimes rural physicians are required to maintain a broader scope of training and practice in comparison to their urban counterparts in areas such as obstetrics, surgery, and emergency services; services which urban family physicians can quickly access through nearby local hospitals. An important consideration in health outcomes in rural Idaho is to have an adequate supply of family medicine physicians that are capable of covering the broad scope of practice necessary to address the

health care needs of the community (Baker, Schmitz, Epperly, Nukui & Miller, 2010). The purpose of this investigation is to compare the results from the original 2007 Idaho physician rural workforce study (Baker, Schmitz, Newell & Ford, 2007) to the current study of family medicine physicians in rural Idaho and identify factors important in the recruitment and retention of family medicine physicians into rural areas.

## **Methods**

The original funder of the 2007 pilot study (Idaho Department of Health and Welfare – State Office of Rural Health and Primary Care) requested the study be repeated in 2012 to investigate if the rural family medicine physician workforce environment had changed over the last five years. The following described methods are equivalent to the original 2007 study.

### **Human Subjects Review and Approval**

The research methods described in this section as well as the survey instruments and associated documents found in Appendices A through D were reviewed and approved by the Boise State University Human Subjects Institutional Review Board on August 28, 2012 (EX 199-SB12-093).

### **Survey Development**

Both the hospital administrator survey and the rural family medicine physician survey were developed by the researchers following an extensive review of the literature in 2007. The draft surveys, cover letters and associated e-mail notification documents were subsequently reviewed by family medicine physicians from the Family Medicine Residency of Idaho, by leaders of the Idaho Academy of Family Physicians, Inc., and by executives at the Idaho Hospital Association prior to utilization in 2007. The final documents can be found in Appendices A through D. These documents mirror those used in the 2007 survey in order to maximize the comparative value of the study. Only minor editorial changes were permitted in 2012.

### **Selection and Recruitment of Target Populations**

The target population for the hospital administrator survey was hospital administrators in Idaho counties with populations of less than 50,000. The Idaho Hospital Association (IHA) identified 29 hospitals meeting this criterion from their database. The IHA was the primary contact to these hospital administrators for all correspondence related to this research. This

included the initial e-mail notification that a survey was being sent, the mailing of the survey and cover letter, and the second e-mail notification (see Appendices A and B). Surveys were sent by the IHA to 28 administrators as two hospitals shared one hospital administrator. The target population for the rural family medicine physician survey was family medicine physicians practicing in Idaho counties with populations of less than 50,000. The Idaho Academy of Family Physicians, Inc. (IAFP) initially identified 288 family medicine physicians meeting this criterion in their database. The IAFP was the primary contact to these family medicine physicians for all correspondence related to this research. This included the initial e-mail notification that a survey was being sent, the mailing of the survey and cover letter, and the second e-mail notification (see Appendices C and D). Surveys were delivered by the IAFP to 252 family medicine physicians as undeliverable addresses resulted in 36 surveys being returned.

### **Survey Administration Process**

The Idaho Hospital Association (IHA) and the Idaho Academy of Family Physicians, Inc. (IAFP) both followed the same survey administration process and timeline for distributing their surveys. First, the IHA and the IAFP sent an e-mail notification to their respective association members on or about September 26, 2012 that a survey was being sent related to rural family medicine physician workforce concerns (see Appendices C and D). Simultaneously, the surveys were mailed to the respondents. The survey package included: (1) the survey (see Appendices A and C), (2) a cover letter with IHA and IAFP letterhead, and (3) a Boise State University Center for Health Policy return postage paid business reply mail envelope. The survey package was enclosed in an IHA or IAFP official envelope. Members were requested to return the survey by October 16, 2012. On or about October 8, 2012, a reminder e-mail was sent by the IHA and IAFP (see Appendix B and D). Completed surveys were sent to Boise State University and were processed in the Center for Health Policy, College of Health Sciences.

## **Data Processing, Analysis and Storage**

The surveys were processed at Boise State University by researchers who coded quantitative responses and entered these data into SPSS (Version 20.0) for statistical analysis. The qualitative comments were transcribed into Excel documents. The researchers then reviewed and categorized these responses.

The overall analyses for the hospital administrator survey and the rural family medicine physician survey employed descriptive statistics. The comparative analyses for the surveys utilized t-tests (with equal and unequal variance assumptions) and Mann-Whitney U tests for survey questions with numerical responses and Chi-Square and Fisher's Exact tests for survey questions with categorical responses. These data have been stored in locked files and password protected hard drives at the Center for Health Policy at the College of Health Sciences, Boise State University. Access to the raw data has been limited to the research investigators.

## **Results**

The results for this study are organized into four sections. First, the results for the hospital administrator survey are presented. The hospital administrator survey results have two components: the overall quantitative and overall qualitative results. The second section of the results portrays the findings for the rural family medicine survey. The rural family medicine survey results have five components: the overall quantitative and qualitative results and the comparative results for the quantitative variables by gender, age group and employment group. Third, the results provide comparisons across survey respondent groups (hospital administrators versus family medicine physicians) for selected quantitative variables. Finally, the last section of the results provides comparison across the two years of the replicated study. The tables supporting these results are found in the Tables section of the report.

### **Hospital Administrator Survey Results**

The hospital administrator survey was mailed to 28 hospital administrators and was returned by 20 for a survey response rate of 71.4%. The two components of the results for this survey are found below.

#### ***Overall Quantitative Results***

The overall quantitative results section is divided into three areas. First, the survey questions with numerical answers are detailed in Table 1. Second, survey questions with dichotomous answers are presented in Table 2. And finally, survey questions with satisfaction answers are found in Table 3.

Table 1 2012 results show that hospital administrator respondents had an average of 6.2 full time equivalent (FTE) family medicine physicians on staff at their facilities. The average number of family medicine physicians currently being recruited at these hospitals at the time of the survey was 0.7 FTEs. The median number of FTE family medicine physicians being

recruited was 1.0 (9/19, or 47.4% of the responses indicated that the facility was recruiting no FTE family medicine physicians at the time of the survey). The average distance from the practice site to a higher service level hospital at these facilities was 44.9 miles. Hospital administrators reported that family medicine physicians should work an average of 39.3 hours per week on direct patient care, should be on call for any service an average of 33.7 hours a week and should see an average of 88.9 clinic patients per week. Table 1 also shows 2007 results for comparative purposes.

Table 2 2012 results show that 68.4% of the respondents indicated that they had an opportunity for loan repayment for family medicine physician at their facilities. Family medicine physicians at these facilities were reported to provide (% providing) obstetrics services in the areas of prenatal care (75.0%), vaginal delivery (65.0%) and C-sections (60.0%). These family medicine physicians were also reported to provide (% providing) other operating room services (65.0%), EGD or colonoscopy services (65.0%), emergency room coverage (70.0%), inpatient admissions (100%), mental health services (52.6%), and nursing home services (95.0%). Respondents reported that family medicine physicians supervised midlevel care providers at 90.0% of their facilities. Family medicine physicians at these facilities are reported to use a variety of internet databases, teleconferencing, electronic health records for patient care and other electronic physician education materials (use rates among categories ranges from 89.5% to 95.0%). Hospital administrators reported a requirement of maintaining board certification in family medicine at their facilities in 60.0% of the responses and 100% of the respondents indicated that they would support educational opportunities for medical students and/or residents at their sites. Table 2 also shows 2007 results for comparative purposes.

Table 3 2012 results show that 73.7% of hospital administrators were very satisfied or satisfied with compensation for their family medicine physicians. They were very satisfied or satisfied with malpractice coverage (100%), coverage for vacation or leave (79.0%), ability to recruit qualified family medicine physicians (57.9%), and turnover (90.0%) for family medicine physicians at their facilities. Hospital administrators reported a satisfied or very satisfied level of 90.0% with their current family medicine physician staff. Table 3 also shows 2007 results for comparative purposes.

### ***Overall Qualitative Results***

Two qualitative questions were asked of the hospital administrator respondents in 2012. First, they were asked about employment business models they utilized with their family medicine physicians. This question resulted in a concentration of responses with employed physicians, moving toward an employed/contracted model and employed with a contract. Additional answers included independent practice models with income guarantees, hospital paying for all expenses including malpractice and benefits, recruitment assistance and a few independent practitioners. The second question focused on identifying the most significant barrier to full recruitment of qualified family medicine physicians. There were a wide variety of answers which included compensation, loan repayment, increased workload, limited scope of practice for family medicine physicians prepared to do OBGYN and C-section, limited call coverage, emergency department coverage, living in isolated communities and spousal satisfaction issues.

### **Rural Family Medicine Physician Survey Results**

The rural family medicine physician survey was successfully mailed to 252 rural family medicine physicians and was returned by 89 for a survey response rate of 35.3%. The five components of the results for this survey are found below.

### ***Overall Quantitative Results***

The overall quantitative results section is divided into three areas. First, the survey questions with numerical answers are detailed in Table 4. Second, survey questions with dichotomous questions are presented in Table 5. And finally, survey questions with satisfaction answers are found in Table 6.

Table 4 2012 results indicate that rural family medicine physician respondents were an average of 48.9 years of age and had an average of 17.2 years in practice post residency. These family medicine physicians reported an average of 12.7 years of service at their current practice site and anticipated they would be at this site for an additional average of 11.4 years. They also reported that they anticipated future years of work at any site to be an average of 15.5 years. The average distance from the practice site to the reported physician residency site was 784.5 miles. There were 53.5% of rural family medicine physicians less than 500 miles from their practice site to the reported physician residency site. Rural family medicine physicians who responded to this survey reported that they provided an average of 40.9 hours per week on direct patient care, were on call for any service an average of 48.2 hours a week and saw an average of 75.3 clinic patients per week. Table 4 also shows 2007 results for comparative purposes.

Table 5 2012 results show that 22.5% of the respondents were female and 44.3% of the respondents had medical school or residency training in Idaho. Of the responding family medicine physicians, 25.6% indicated that they had an opportunity for loan repayment at their current site. Family medicine physicians reported providing (% providing) obstetrics services in the areas of prenatal care (40.2%), vaginal delivery (33.3%) and C-sections (25.0%). These respondents also provided (% providing) other operating room services (31.7%), EGD or colonoscopy services (17.4%), emergency room coverage (39.8%), inpatient admissions (78.2%), mental health services (86.2%), and nursing home services (76.1%). Family medicine

physicians also reported responsibility for supervising midlevel care providers in 81.8% of the responses. Respondents reported use of internet databases, teleconferencing, electronic health records for patient care and other electronic physician education materials (use rates among categories ranged from 51.7% to 94.4%). Rural family medicine physicians indicated that they were planning to maintain board certification in family medicine in 90.7% of the responses and 79.3% of the respondents indicated that they would encourage medical students or residents to enter rural family medicine. Table 5 also shows 2007 results for comparative purposes.

Table 6 2012 results indicate that 78.6% of rural family medicine physicians were very satisfied or satisfied with compensation for patient care. They were very satisfied or satisfied with malpractice coverage (96.5%), coverage for vacation or leave (83.5%) and the ability of their hospital to recruit qualified family medicine physicians (62.6%). Rural family medicine physicians reported a satisfied or very satisfied level of 92.9% with their current practice. Table 6 also shows 2007 results for comparative purposes.

### ***Overall Qualitative Results***

Two qualitative questions were asked of the rural family medicine physician respondents in 2012. First, respondents were asked about their employment/business relationship. This question was coded into Employed and Not Employed categories and was used in comparative analyses as a classification variable. Respondents reported being employed in 46.3% (38/82) of the cases and not employed in 53.7% of the cases (44/82) where information about employment was available. This was an increase in employment of 13 percentage points from 2007 (46.3% in 2012 versus 33.3% in 2007). The second question focused on identifying the rural family medicine physician's primary source of continuing medical education. Online educational resources were identified in 2012 as a primary source compared to the 2007 study. The additional responses offered a wide array of answers including conferences, AAFP and CME

courses, teaching residents, hospital lectures, journals, home study, meetings and internet materials.

### ***Comparative Results by Gender***

The responses from the rural family medicine physician survey were analyzed for differences by gender and these results are portrayed in Tables 7, 8 and 9. Statistically significant results ( $p=0.05$ ) are highlighted in green for 2007 and highlighted in blue for 2012 results. Satisfaction question responses (Table 9) were collapsed into two categories: Satisfied and Not Satisfied in order to utilize categorical statistics (e.g., Chi-square). Very Satisfied and Satisfied responses were collapsed into the Satisfied category while Very Unsatisfied and Unsatisfied responses were collapsed into the Unsatisfied category. Tables 7, 8 and 9 also show 2007 results for comparative purposes.

Table 7 shows that male respondents had more years of practice at their current sites ( $p=0.007$ ), and had on average, more hours per week providing direct patient care ( $p=0.013$ ) in 2012.

Table 8 indicates that female respondents were more likely to have medical school/residency training in Idaho ( $p=0.034$ ), were more likely to provide prenatal care ( $p=0.040$ ), and were more likely to provide vaginal deliveries ( $p=0.019$ ) in 2012. Male respondents were more likely to provide EGD or colonoscopy ( $p=0.018$ ) and were more likely to provide ER coverage ( $p=0.010$ ) in 2012.

Table 9 does not show any significant values in 2012.

### ***Comparative Results by Age Group***

The responses from the rural family medicine physician survey were analyzed for differences by age group and these results are portrayed in Tables 10, 11 and 12. Age groups were constructed using the median age for all family medicine physician respondents. The

median age was 48.5 years. Two age groups were created: 30-48 years of age and 49-83 years of age. Statistically significant results ( $p=0.05$ ) are highlighted in green for 2007 and blue for 2012 results. Satisfaction question responses (Table 12) were collapsed into two categories: Satisfied and Not Satisfied in order to utilize categorical statistics (e.g., Chi-square). Very Satisfied and Satisfied responses were collapsed into the Satisfied category while Very Unsatisfied and Unsatisfied responses were collapsed into the Unsatisfied category. Tables 10, 11 and 12 also show 2007 results for comparative purposes.

Table 10 shows that 49-83 years of age respondents had more years in practice post residency ( $p<0.001$ ) and had more years of service at their current sites ( $p<0.001$ ). Age group 30-48 years of age respondents anticipated more future years of service at their current sites ( $p<0.001$ ) and anticipated to be practicing more years at any site ( $p<0.001$ ). These 2012 results were expected due to the age constructed brackets.

Table 11 indicates that 30-48 years of age respondents were more likely to have access to service obligation or loan repayment at their current sites ( $p=0.003$ ), more likely to provide inpatient admissions ( $p<0.001$ ), and to provide mental health services ( $p=0.004$ ) in 2012.

Table 12 shows no statistically significant results across age groups for the collapsed satisfaction questions in 2012.

### ***Comparative Results by Employment Group***

The responses from the rural family medicine physician survey were analyzed for differences by employment group and these results are portrayed in Tables 13, 14 and 15. Employment group classifications were constructed using qualitative responses from the survey. Two groups were constructed: Employed and Not Employed. Statistically significant results ( $p=0.05$ ) are highlighted in green for 2007 results and highlighted in blue for 2012 results. Satisfaction question responses (Table 15) were collapsed into two categories: Satisfied and Not

Satisfied in order to utilize categorical statistics (e.g., Chi-square). Very Satisfied and Satisfied responses were collapsed into the Satisfied category while Very Unsatisfied and Unsatisfied responses were collapsed into the Unsatisfied category. Tables 13, 14 and 15 also show 2007 results for comparative purposes.

Table 13 shows that Not Employed respondents had more years of service at their current practice sites ( $p=0.014$ ) and saw more clinic patients per week ( $p=0.008$ ) in 2012.

Table 14 indicates that Employed respondents were more likely to provide C-sections ( $p=0.041$ ), provide other OR services ( $p=0.050$ ), and provide emergency room coverage ( $p=0.001$ ) in 2012.

Table 15 shows no statistically significant results across employment groups for the collapsed satisfaction questions in 2012.

#### ***Comparisons across Survey Respondent Groups***

Seven questions from the hospital administrator survey and the rural family medicine physician survey were analyzed for differences between respondent groups provided in Tables 16 and 17. There were no statistically significant results observed in Tables 16 and 17 in 2012. Tables 16 and 17 also show 2007 results for comparative purposes.

#### ***Comparison Results across Years***

The responses from the rural family medicine physician survey were analyzed for differences by year and these results are portrayed in Tables 18-23. Statistically significant results ( $p=0.05$ ) are highlighted in green for 2007 and highlighted in blue for 2012. Satisfaction question responses (Table 9) were collapsed into two categories: Satisfied and Not Satisfied in order to utilize categorical statistics (e.g., Chi-square). Very Satisfied and Satisfied responses were collapsed into the Satisfied category while Very Unsatisfied and Unsatisfied responses

were collapsed into the Unsatisfied category. Tables 18-23 also show 2007 results for comparative purposes.

Table 18 indicates that on average, rural family medicine physicians saw less clinic patients per week in 2012 ( $p=0.013$ ).

Table 19 demonstrates that in 2012 rural family medicine physicians were less likely to provide prenatal care ( $p=0.020$ ), provide vaginal delivery ( $p=0.011$ ), and provide nursing home services ( $p=0.037$ ). Rural family medicine physicians in 2012 were more likely to utilize internet databases, journals, and e-publications ( $p=0.020$ ), more likely to utilize teleconferencing or other interactive technology ( $p=0.043$ ), more likely to utilize electronic health records for patient care ( $p<0.001$ ), and more likely to utilize electronic physician education materials ( $p=0.004$ ).

Table 20 shows rural family medicine physicians are more satisfied with malpractice coverage arrangements in 2012 ( $p=0.001$ ).

Table 21 indicates no significant results in 2012.

Table 22 demonstrates that in 2012 rural family medicine administrators are more likely to report that family medicine physicians utilize electronic health records for patient care ( $p=0.016$ ).

Table 23 indicates no significant results in 2012.

## **Discussion**

The discussion section is divided into five areas. First, the research limitations of this study are described. The second area discusses the results for the hospital administrator survey. The third section reviews the rural family medicine physician survey results. The fourth section compares the results to Community Apgar Program findings. Lastly, a brief summary of high-level observations for this research is provided. Recommendations for further study are also noted within each of the areas.

### **Research Limitations**

The primary limitation of this research is that the respondents for the surveys may not represent the entire eligible respondent classes. The overall response rates for the two surveys were relatively high given the nature of the survey methodology. These relatively high response rates can most likely be attributed to the partnerships with the Idaho Academy of Family Physicians, Inc. (IAFP) and the Idaho Hospital Association (IHA) in securing participation of their respective memberships in the surveys. Although the response rate for the hospital administrator survey was 71.4% (20/28), eight hospitals did not return the surveys. With a total response number of 20, eight additional surveys could alter the hospital administrator results. The rural family medicine physician survey response rate was 35.3% (89/252). Again, the non-respondents could significantly impact the family medicine physician results. However, comparisons of the average age and gender of the respondents to the comparable statistics of the full IAFP membership show similar values (average age: 48.9 sample versus 47.6 IAFP full membership; percent female: 22.5% sample versus 30.8% IAFP full membership) and this increases the likelihood that the obtained sample of physicians represents the entire population of interest. It is important to note that the full IAFP membership includes both rural and non-rural

IAFP members and may overstate total female membership relative to rural female actual rates and may also skew average age comparisons.

A second limitation of the research is that small sample sizes in some analyses yielded limited statistical power to detect differences between groups. Increasing the sample sizes in these comparisons would enhance the probability of detecting statistically significant differences between groups, if such differences actually exist.

### **Hospital Administrator Survey**

Hospital administrators reported that their facilities had an average of 6.2 full time equivalent (FTE) family medicine physicians on their medical staffs in 2012. The median number of such FTEs on staff was 5.0 in 2012. The median number of FTEs currently being recruited at these facilities was 1.0 and 9 of 19 facilities indicated that they were recruiting no FTEs in 2012. This suggests that recruitment challenges at rural facilities are not uniform and that future research may need to focus on a more select group of facilities. Notably, 68.4% of the facilities reported in 2012 that they had an opportunity for loan repayment at their sites which was an increase from 61.1% in 2007. While this movement is not significant from a statistical perspective, it does indicate practical movement and may be an important variable to monitor in the future. It should also be noted that hospital administrators indicated a high level of satisfaction with their current family medicine physician staff in 2012.

Hospital administrators reported that in 2012 family medicine physicians at their facilities provided a wide range of obstetrics services ranging from prenatal care to vaginal delivery and C-sections. While hospital administrators reported an increase in family medicine physicians providing services for vaginal delivery and C-sections at their facilities, their responses showed that there was a decrease in the percentage of family medicine physicians providing prenatal care in 2012 at these same facilities. Hospital administrators reported an increase for family medicine

physicians providing OR services in 2012. Similarly, administrators reported that family medicine physicians provided EGD or colonoscopies more frequently in 2012, about a 15 percentage point increase from 2007. Over two thirds of these respondents indicated that family medicine physicians covered the emergency departments in 2007 with a slight increase in 2012, and almost all indicated that family medicine physicians provided inpatient admissions and nursing home services in both studies in 2012. Almost 80% of these family medicine physicians were reported to supervise midlevel care in 2007 with an increase to about 90% in 2012. On the other hand, less than half (42.1%) of the hospital administrator respondents indicated that family medicine physicians provided mental health services in 2007, and this number increased to slightly over half (52.6%) providing mental health in 2012. These data support the increase in scope of practice for family medicine physician in a wide variety of clinical services at the reporting hospitals. However, it should be noted that none of these changes was statistically significant. Future studies may wish to address the relatively lower rate of provision of mental health services by these facilities and physicians as well as the decrease in family medicine physicians providing prenatal care.

The increase of technology utilization is apparent in the hospital administrator respondents in 2012 indicating that the majority of their family medicine physicians used a number of electronic and internet-based tools to help support their practice and ongoing training and education. Results from 2007 for utilizing teleconferencing or other interactive technology had an increase of about 22.8 percentage points in 2012. Another increase reported was in the utilization of electronic medical records for patient care at about 95% in 2012 compared to 61.1% in 2007. This was the only statistically significant change in the use of electronic and internet-based tools. These findings follow the increasing technology trends in the overall health care system. Two-thirds of the facilities reported that maintaining board certification was a

requirement in 2012 and 100% supported participation in educational opportunities for students and residents at their facilities in 2012, both similar to the 2007 findings. It appears that most hospitals in 2007 and 2012 are providing advanced clinical and educational opportunities or support for their family medicine physician staff, which may also augment recruitment and retention efforts at their sites.

Finally, hospital administrator respondents indicated a high rate of satisfaction with their family medicine physician staff in 2012 with about 90% indicating they were either very satisfied or satisfied. These respondents were also satisfied with other areas involved with recruitment and retention of family medicine physicians including vacation coverage and turnover in 2012. Results in 2012 showed that 100% of respondents were either very satisfied or satisfied with their malpractice insurance which was similar to 2007 levels (94%). An increase in satisfaction was evident regarding compensation for direct patient care for family medicine physicians in 2012 from 2007 levels with only five respondents indicating unsatisfied and zero indicating very unsatisfied. The results suggest that reporting hospital administrators were slightly less satisfied with their ability to recruit qualified family medicine physicians in 2012 compared to 2007. Further research to identify the reasons for this decrease in satisfaction regarding recruitment and retention and the policies and strategies currently employed by these facilities could be beneficial. The Community Apgar Project provides a research focus and approach regarding Idaho critical access hospitals (CAHs) to determine how they may support recruitment and retention of family medicine physicians (Schmitz, Baker, Nukui & Epperly, 2011). Additionally, similar efforts are underway as a part of the national Community Apgar Project to delineate the similarities and differences between Idaho CAHs and other state CAHs in how they support recruitment and retention of family medicine physicians to hospital-based practice in rural areas.

## **Rural Family Medicine Physician Survey**

### ***Overall Results***

The comparative results by year from 2007 to 2012 show a significant decrease in family medicine physician clinic patients seen weekly while the literature reports patient wait times for non-urgent care are increasing over time (Staiger, Auerbach & Buerhaus, 2010; Wilper, Weppner & Smith, 2010). In addition, responding rural family medicine physicians reportedly are providing significantly less prenatal care and vaginal deliveries in 2012 compared to 2007. This finding could suggest that a fewer number of physicians are providing OB services in the rural CAH settings overall, could be related to a consolidation of those family physicians providing OB services or might be associated with a change in the type of staff performing OB services. This is an area for further research. Rural family medicine physicians in 2012 are providing significantly less nursing home services which should be further researched to determine if nursing home services are being outsourced, consolidated, or possibly less physicians are offering this service within their scope of work.

Family medicine physicians reported a slight, non-significant decrease in providing mental health services from 2007 to 2012 (from 90.1% to 86.2%). Hospital administrators reported having family medicine physicians providing mental health services at a much lower percentage (52.6%) in 2012. This information could benefit from further research to determine the reason for this disparity. Possibly administrators do not realize the amount of mental health services being provided by physicians or possibly that outpatient physicians solely provide more mental health services. On the contrary to family medicine physicians, the hospital administrators reported rates increasing from 2007 from 42.1% to 52.6% (% providing) for family medicine physicians providing mental health services in 2012 at their facilities. This rate increase was not statistically significant.

There is a significant increase in technology utilization reported by rural family medicine physicians in 2012 compared to 2007. The results show an increase in utilization in internet databases, use of journals and e-publications, utilization of teleconferencing or other interactive technology, an increase in utilization of electronic health records for patient care, as well as utilization of electronic physician education materials. These results match the increasing role of technology trends in the overall health care system.

Satisfaction in malpractice coverage has significantly increased from 2007 to 2012. This increase in satisfaction in malpractice coverage arrangements could benefit from future research as this could be due to an increasing employment trend or potentially a decrease of family medicine physicians performing OB services. Idaho tort reform set a cap of \$250,000 for non-economic damages in 2004 which eased the medical liability of Idaho providers (Ellington et al., 2010) which might also impact this finding. The current Idaho 2013 malpractice cap for non-economic damages is \$313,567.36 as the reform included an annual adjustment tied to wage increases or decreases.

### ***Gender Results for 2012***

Rural family medicine physician's comparative results by gender in 2012 indicated significantly lower results for females than males for years at practice site. This result suggests that female physicians possibly have less time in career, are younger than males, or females moved to the practice site later in their career. This result warrants future research. In addition, on average, females worked fewer hours per week providing direct patient care than males in 2012. This could be due to an age factor or other reasons that could be determined with further research. Recent studies have shown the trend of females working fewer hours per week than males (Staiger et al., 2010). Additional research has shown an overall decrease in hours per

week worked by primary care physicians in Idaho between 1996 and 2009 (Wilper et al., 2010) which could impact this gender based result.

The rural family medicine physician survey indicates significantly higher number of females with medical school/residency training in Idaho in 2012. This may in part be reflective of trends both nationally and within Idaho demonstrating an increase in females entering these training programs. The results demonstrate a significantly higher number of females providing prenatal care and vaginal delivery. Further research on this trend could be useful to investigate whether or not a patient bias for these services being provided by a particular gender is occurring. It is noted that there are significantly more males providing ER services in 2012 than females. This is unlikely to be due to a patient bias as choice is essentially eliminated from an emergency care situation. Providing EGD or colonoscopy is also significantly higher for males in 2012.

#### ***Gender Results across Time Periods***

Cross year results for age have changed from males being significantly older in 2007 to a non-significant age gap in 2012. Years in practice post residency also shows this same trend across time periods where males had significantly more years in practice post residency in 2007 and this gap had narrowed to a non-significant difference in 2012. These results may show the recent influx of female physicians into these rural areas. However, the survey results demonstrate years at practice site remain significantly different as males have increased number of years at a practice site in 2007 and 2012. On average, hours per week to provide direct patient care did not reveal a significant gender difference in 2007; however, in 2012 there was a significantly higher number of hours per week for males providing direct patient care. Males provided significantly more care to clinic patients per week in 2007, but in 2012 the difference

was no longer significantly different and had narrowed appreciably. The productivity complexities in these findings deserve further investigation.

An increasing trend of physicians becoming employed has changed from having a significant difference between males and females in 2007 to no significant difference in 2012 suggesting a decrease in gender differences of the employment group in 2012. The results showed a significant gender difference with an increase in females receiving their training at a medical residency in Idaho compared to 2007 which correlates to an identified increase in the proportion of female matriculates in the combined Idaho residency programs Family Medicine Residency of Idaho and Idaho State University Family Medicine Residency Program.

Gender differences for rural family medicine physicians were not apparent in 2007 for providing prenatal care and vaginal delivery; however, in 2012 there was a significantly greater percentage of females providing this care. Further research would be beneficial to discover if this is due to patient bias towards female physicians for this type of medical care as well as investigating if there is a trend in the availability of female physicians for prenatal and vaginal deliveries. Males providing EGD and colonoscopy services remain significantly higher than females providing these services in 2007 and 2012. Revenue is generated by procedures like the EGD or colonoscopies and future research could help identify additional reasons for these findings. In addition, in 2012 there was a significantly higher amount of males providing ER coverage which was not evident in 2007. Further research is warranted as this could be due to the demands of ER-related scope of practice, in-hospital time requirements and/or income potential related to this area of rural practice.

Utilization of internet databases, journals and e-publication do not show any gender differences for 2012 when previously in 2007 there was a significantly greater use by females. Similarly, female utilization of electronic physician education materials is not significantly

different from males in 2012 when it was in 2007. Further research could help identify if this is due to an age bias in correlation with gender difference.

### ***Age Group Results for 2012***

In 2012 the comparative results by age group for rural family medicine physicians show that younger physicians are more likely to work in sites where there was service obligation or loan repayment. According to the American Academy of Medical Colleges (AAMC), about 86% of medical students will graduate with educational debt with a median figure of about \$162,000 (Youngclaus & Fresne, 2012). The Idaho Rural Physician Incentive Program (RPIP) was established in 2003 as an effort to recruit Idaho physicians (MGT America, 2007). This program consists of an “incentive fee collected by the State Board of Education deposited into the Rural Physician Incentive Fund to repay medical student educational debts of rural physicians who practice primary care medicine in medically underserved areas of the state that demonstrate a need for assistance in physician recruitment” (MGT America, 2007, p. 2-7). Programs like these may be important to rural family medicine physician workforce and merit additional research. The comparative results by age group for rural family medicine physicians also demonstrated a significant difference showing that younger physicians provided inpatient admissions at higher rates than older physicians in 2012. These findings also merit additional consideration. Rural family medicine physicians in 2012 also reported a significantly higher number of younger providers delivering mental health services, which could be correlated to changes in curriculum and training of family medicine residents emphasizing psychiatric care and mental health practice within family medicine scope of services.

### ***Age Group Results across Time Periods***

Study trends showed that younger physicians were significantly more likely to be employed in 2007, but by 2012 this was not the case. Future research to investigate whether this

difference is a function of age or the changes in medical business models could be useful. Providing prenatal care and vaginal deliveries does not show a significant age difference in 2012 when there was a difference in 2007. Younger physicians were significantly more likely to provide inpatient admissions in both 2007 and 2012. In addition, the younger age group is significantly more likely to engage in the delivery of mental health services. Graduate Medical Education (GME) curricular programming in Idaho may explain the findings in scope of practice for prenatal care, vaginal delivery, inpatient admissions, and mental health services. Age differences regarding maintaining board certification have disappeared in 2012. This could be due to increased pressure from hospitals and insurers to have the board certification. Further research would be helpful.

### ***Employment Group Results for 2012***

In 2012 non-employed physicians had significantly more years at their practice site than employed physicians. On average, non-employed physicians also saw significantly more clinic patients per week than employed physicians in 2012. Employed physicians had higher rates of providing C-sections, other OR services and ER coverage in 2012. These services are all hospital based where trends indicate that physicians providing these services are more likely to be employed. Family medicine physicians are an important group for further research as employment trends continue to shift to employed physicians within a hospital setting. Suggested areas for further research include the areas of physician productivity when correlated to age, low volume workflow environments, and provider practice style differences such as work-life balance preferences or motivation level. A recent study on rural and non-rural Idaho physicians regarding their level of “Grit”, which measures an individual’s perseverance and efforts for long term goals, may be useful in addressing some of these issues (Reed, Schmitz, Baker, Nukui & Epperly, 2012).

### ***Employment Group Results across Time Periods***

Respondents reported relatively large increases in being employed from 2007 to 2012. Although these increases were not statistically significant, this finding merits additional research especially focusing on how this increase is related to gender and age findings. In 2012 the employment group gap has disappeared and there is no longer a significant difference in age as well as years in practice post residency between employed and non-employed physicians. A difference remains in years at the practice site with non-employed physicians having greater longevity. The non-employed group also saw significantly more patients per week in 2007 and 2012. Further research could help identify if this is due to age differences, stability of being an employed physician, productivity issues or other factors. In addition, 2012 yields significantly higher results for employed physicians providing C-sections and OR services compared to 2007 levels and ER coverage is higher in both 2007 and 2012 for employed physicians. These hospital services are more likely to have employed physicians and perhaps this is one way to supply ER coverage and to offer maternity services at the facility. Outpatient services such as mental health and supervised midlevel care are no longer showing a difference in 2012 between the employed and non-employed group compared to 2007 levels. The impact of market forces may be of interest in this convergence of outpatient services.

Utilization of teleconferencing or other interactive technology and use of electronic health records indicated differences between employment groups in 2007 but do not have a significant difference in 2012. The increase in technology use is apparent in 2012 from 2007. This employment group trend also exists with the equalization of rates for maintenance of board certification in family medicine. Employed physicians had higher satisfaction for malpractice coverage in 2007, but by 2012 the satisfaction between the employment groups equalized for this variable.

### ***Respondent Group Results across Time Periods***

An interesting difference between administrators and physicians was found in the perceptions of how many hours per week a family medicine physician should provide direct patient care. In 2007 the results indicated that physicians had higher expectations for work load than administrators. In 2012 there was no significant difference between physicians or administrators in how many hours a week a physician should provide direct medical care. Future research could help discover if this is due to physician characteristics, an increasing employment trend or clearer expectations of productivity.

### **Results Compared to Community Apgar Project Findings**

The Community Apgar Project has produced a limited identification of the recruitment factors most important in the state of Idaho in 2008 and 2012 which closely matches the assessment periods of this study. The limited nature of this identification is based on the representativeness of the Apgar data (e.g. not all Idaho CAHs are included in the Apgar database) and also because Apgar 2008 and 2012 findings are not completely independent due to some overlapping of hospitals in the respective databases. Within the state of Idaho, factors deemed most important in the recruitment and retention of family medicine physicians to CAH communities include spousal satisfaction (identified as the top challenge in most states studied), call and practice coverage, and income guarantee. Spousal satisfaction remains the most significant challenge weighted for importance while shopping and other services, schools, and mental health services were also noted among the most significant challenges across the years of study. The greatest advantages to recruitment and retention included recreational opportunities as the highest scoring for both the 2008 and 2012 analyses, with community need and support of the physician, internet access, and income guarantee among the top factors.

Among the differences seen in 2012 from the 2008 Idaho Community Apgar Program analyses, provision of obstetrical services in 2012 was noted to be “a top 10 challenge” to recruitment and retention in addition to the C-sections factor, only the latter being present in the “top 10 challenges” of both analyses. This may be correlated to the finding of the present study with regard to the decreased reporting by rural family physicians providing these prenatal services in 2012 compared to 2007. Among the changes in advantages in recruitment and retention, call practice and coverage as well as “competition” related to the collegial relationships between family medicine physician local staff were newly found to be among the top ten positive factors in the 2012 when compared to the 2008 analysis, as was employment status. These trends may be pertinent to the findings of this study as related to decreased number of working and call hours as well as the trend toward physician employment.

### **Summary**

Rural hospitals and family medicine practices in rural areas across the country are experiencing rural workforce challenges. In 2012, rural Idaho seemed to be actively managing these issues and rural family medicine physicians and administrators of CAHs report a satisfied workforce providing a broad scope of patient services similar to the findings in 2007. Idaho practicing rural family medicine physicians and CAH administrators report high levels of satisfaction across critical areas related to rural workforce issues. Comparative results across 2012 and 2007 suggest an important and increasing role for females in the rural family medicine physician workforce. Employment of physicians also seems to be increasing and may be an important variable to study in coming years. Utilization of internet databases, journals, and e-publications is increasing.

Similar to the time of the report of the 2007 study, this report is within the context of recent research indicating that Idaho will need substantially more family medicine physicians in

the coming years. It is important that further research continue to focus on how to meet these upcoming needs. This study suggests that such research focus on issues such as gender, age, employment status, compensation, call and practice coverage, provision of mental health services, prenatal care and delivery services, inpatient care services, use of technology, hospital policies, and the role of the Idaho graduate and undergraduate medical education programs as they relate to the development of the family medicine workforce in rural areas of Idaho.

An increasing emphasis on access to primary care in the setting of healthcare delivery changes has continued to identify an adequate supply of family medicine physicians as being critical to maximizing the health outcomes of Idaho citizens. The key groups in the recruitment, training, and retention of these physicians should continue to deploy their resources and advocate so that rural areas have the medical services and workforce they need. This study, consistent with the earlier report, suggests that rural Idaho may uniquely recruit and retain qualified and highly satisfied family medicine physicians providing an unusually broad set of medical services to meet workforce needs in rural areas. Further investigating these factors may have significant implications when correlated with ongoing studies in planning for the future health care needs of Idaho's rural citizens.

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Table 1  
Overall Results for the Hospital Administrator Survey  
Survey Questions with Numerical Answers

Survey Question	Year	N	Range	Standard Deviation	Median	Mean
Full-time equivalent Family Medicine physicians on staff?	2007	18	0-14	4.1	3.0	4.8
	2012	20	1-21	4.6	5.0	6.2
Full-time equivalent Family Medicine physicians currently recruiting for?	2007	18	0-3	1.0	0.0	0.8
	2012	19	0-2	0.7	1.0	0.7
Proximity of practice site to nearest hospital with higher scope of services in miles?	2007	16	24-140	33.6	55.0	61.9
	2012	19	1-95	25.7	45.0	44.9
On average, how many hours per week should a Family Medicine physician provide direct patient care?	2007	17	28-55	6.9	38.0	37.4
	2012	18	32-50	5.5	40.0	39.3
On average, how many hours per week should a Family Medicine physician be on call for any service?	2007	16	8-96	21.7	24.0	32.6
	2012	15	12-72	16.0	36.0	33.7
On average, how many clinic patients should a Family Medicine physician see per week?	2007	17	35-130	20.4	96.0	89.5
	2012	17	55-150	22.6	80.0	88.9

Table 2  
Overall Results for the Hospital Administrator Survey  
Survey Questions with Dichotomous Answers

Survey Question	Year	N	Yes Percent (N)	No Percent (N)
Any current opportunity for loan repayment?	<b>2007</b>	18	61.1 (11)	38.9 (7)
	<b>2012</b>	19	68.4 (13)	31.6 (6)
Do Family Medicine physicians provide prenatal care?	<b>2007</b>	18	83.3 (15)	16.7 (3)
	<b>2012</b>	20	75.0 (15)	25.0 (5)
Do Family Medicine physicians provide vaginal delivery?	<b>2007</b>	19	63.2 (12)	36.8 (7)
	<b>2012</b>	20	65.0 (13)	35.0 (7)
Do Family Medicine physicians provide C-section?	<b>2007</b>	19	57.9 (11)	42.1 (8)
	<b>2012</b>	20	60.0 (12)	40.0 (8)
Do Family Medicine physicians provide other OR services?	<b>2007</b>	19	52.6 (10)	47.4 (9)
	<b>2012</b>	20	65.0 (13)	35.0 (7)
Do Family Medicine physicians provide EGD or colonoscopy?	<b>2007</b>	18	50.0 (9)	50.0 (9)
	<b>2012</b>	20	65.0 (13)	35.0 (7)
Do Family Medicine physicians provide ER coverage?	<b>2007</b>	19	68.4 (13)	31.6 (6)
	<b>2012</b>	20	70.0 (14)	30.0 (6)
Do Family Medicine physicians provide inpatient admissions?	<b>2007</b>	18	100.0 (18)	0.0 (0)
	<b>2012</b>	20	100.0 (20)	0.0 (0)
Do Family Medicine physicians provide mental health services?	<b>2007</b>	19	42.1 (8)	57.9 (11)
	<b>2012</b>	19	52.6 (10)	47.4 (9)
Do Family Medicine physicians provide nursing home services?	<b>2007</b>	19	94.7 (18)	5.3 (1)
	<b>2012</b>	20	95.0 (19)	5.0 (1)
Do Family Medicine physicians supervise midlevel care?	<b>2007</b>	19	78.9 (15)	21.1 (4)
	<b>2012</b>	20	90.0 (18)	10.0 (2)
Do Family Medicine physicians utilize internet databases, journals, e-publications?	<b>2007</b>	18	94.4 (17)	5.6 (1)
	<b>2012</b>	20	95.0 (19)	5.0 (1)
Do Family Medicine physicians utilize teleconferencing or other interactive technology?	<b>2007</b>	18	66.7 (12)	33.3 (6)
	<b>2012</b>	19	89.5 (17)	10.5 (2)
Do Family Medicine physicians utilize electronic health records for patient care?	<b>2007</b>	18	61.1 (11)	38.9 (7)
	<b>2012</b>	20	95.0 (19)	5.0 (1)
Do Family Medicine physicians utilize electronic physician education materials?	<b>2007</b>	16	93.8 (15)	6.3 (1)
	<b>2012</b>	20	95.0 (19)	5.0 (1)
Do you require Family Medicine physicians to maintain board certification in Family Medicine?	<b>2007</b>	18	61.1 (11)	38.9 (7)
	<b>2012</b>	20	60.0 (12)	40 (8)
Would you support educational opportunities for medical students and/or residents at your site?	<b>2007</b>	18	100.0 (18)	0.0 (0)
	<b>2012</b>	19	100.0 (19)	0.0 (0)

Table 3  
Overall Results for the Hospital Administrator Survey  
Survey Questions with Satisfaction Answers

<b>Survey Question</b>	<b>Year</b>	<b>N</b>	<b>Very Satisfied % (N)</b>	<b>Satisfied % (N)</b>	<b>Unsatisfied % (N)</b>	<b>Very Unsatisfied % (N)</b>
How satisfied is your hospital with Family Medicine physician compensation for patient care?	<b>2007</b>	17	11.8 (2)	47.1 (8)	29.4 (5)	11.8 (2)
	<b>2012</b>	19	21.1 (4)	52.6 (10)	26.3 (5)	0.0 (0)
How satisfied are you with your malpractice coverage arrangement for Family Medicine physicians?	<b>2007</b>	16	18.8 (3)	75.0 (12)	6.3 (1)	0.0 (0)
	<b>2012</b>	19	36.8 (7)	63.2(12)	0.0 (0)	0.0 (0)
How satisfied are you with your ability to arrange coverage for vacation or leave for Family Medicine physicians?	<b>2007</b>	16	12.5 (2)	62.5 (10)	25.0 (4)	0.0 (0)
	<b>2012</b>	19	31.6 (6)	47.4 (9)	21.1 (4)	0.0 (0)
How satisfied are you with your ability to recruit qualified Family Medicine physicians?	<b>2007</b>	16	18.8 (3)	50.0 (8)	25.0 (4)	6.3 (1)
	<b>2012</b>	19	21.1 (4)	36.8 (7)	36.8 (7)	5.3 (1)
How satisfied are you with Family Medicine physician turnover at your site?	<b>2007</b>	18	22.2 (4)	55.6 (10)	11.1 (2)	11.1 (2)
	<b>2012</b>	20	20.0(4)	70.0(14)	10.0 (2)	0.0 (0)
Overall, how satisfied are you with your current Family Medicine physician staff?	<b>2007</b>	18	38.9 (7)	55.6 (10)	0.0 (0)	5.6 (1)
	<b>2012</b>	20	50.0(10)	40.0 (8)	10.0 (2)	0.0 (0)

Table 4  
Overall Results for the Rural Family Medicine Physician Survey  
Survey Questions with Numerical Answers

<b>Survey Question</b>	<b>Year</b>	<b>N</b>	<b>Range</b>	<b>Standard Deviation</b>	<b>Median</b>	<b>Mean</b>
Age in years?	<b>2007</b>	92	30-83	10.9	48.5	47.2
	<b>2012</b>	89	28-68	10.2	50.0	48.9
Years in practice post residency?	<b>2007</b>	92	1-55	11.2	13.5	16.0
	<b>2012</b>	89	1-41	10.2	17.0	17.2
Years at this practice site?	<b>2007</b>	92	1-38	10.3	10.0	12.9
	<b>2012</b>	89	1-38	9.7	10.0	12.7
Future years anticipated to be at this practice site?	<b>2007</b>	76	0-30	7.9	10.0	13.1
	<b>2012</b>	76	0-31	8.1	10.0	11.4
Future years anticipated to be in practice at any site?	<b>2007</b>	83	0-40	8.4	17.0	16.7
	<b>2012</b>	81	1-50	9.5	15.0	15.5
Proximity of practice site to residency training site in miles?	<b>2007</b>	88	15-3000	743.4	375.0	705.7
	<b>2012</b>	86	0-3000	833.2	350.0	784.5
Proximity of practice site to hometown or extended family in miles?	<b>2007</b>	88	0-3400	963.0	460.0	861.8
	<b>2012</b>	86	0-3000	821.8	262.0	707.6
On average, how many hours per week to you provide direct patient care?	<b>2007</b>	92	16-72	12.1	44.5	44.3
	<b>2012</b>	85	5-80	12.6	40.0	40.9
On average, how many hours per week are you on call for any service?	<b>2007</b>	82	0-168	32.5	33.5	40.0
	<b>2012</b>	80	0-168	48.2	30.0	48.2
On average, how many clinic patients do you see per week?	<b>2007</b>	88	0-210	36.3	85.0	88.5
	<b>2012</b>	80	0-180	31.3	77.5	75.3

Table 5  
Overall Results for the Rural Family Medicine Physician Survey  
Survey Questions with Dichotomous Answers

Survey Question	Year	N	Yes Percent (N)	No Percent (N)
Gender? (Females coded as "Yes"; Males "No")	<b>2007</b>	91	23.1 (21)	76.9 (70)
	<b>2012</b>	89	22.5 (20)	77.5 (69)
Any medical school/residency training in Idaho?	<b>2007</b>	92	33.7 (31)	66.3 (61)
	<b>2012</b>	88	44.3 (39)	55.7 (49)
Any service obligation or loan repayment at current site?	<b>2007</b>	92	21.7 (20)	78.3 (72)
	<b>2012</b>	86	25.6 (22)	74.4 (64)
Do you provide prenatal care?	<b>2007</b>	92	57.6 (53)	42.4 (39)
	<b>2012</b>	87	40.2 (35)	59.8 (52)
Do you provide vaginal delivery?	<b>2007</b>	92	52.2 (48)	47.8 (44)
	<b>2012</b>	87	33.3 (29)	66.7 (58)
Do you provide C-section?	<b>2007</b>	92	37.0 (34)	63.0 (58)
	<b>2012</b>	84	25.0 (21)	75.0 (63)
Do you provide other OR services?	<b>2007</b>	92	43.5 (40)	56.5 (52)
	<b>2012</b>	82	31.7 (26)	68.3 (56)
Do you provide EGD or colonoscopy?	<b>2007</b>	89	22.5 (20)	77.5 (69)
	<b>2012</b>	86	17.4 (15)	82.6 (71)
Do you provide ER coverage?	<b>2007</b>	92	48.9 (45)	51.1 (47)
	<b>2012</b>	88	39.8 (35)	60.2 (53)
Do you provide inpatient admissions?	<b>2007</b>	90	88.9 (80)	11.1 (10)
	<b>2012</b>	87	78.2 (68)	21.8 (19)
Do you provide mental health services?	<b>2007</b>	91	90.1 (82)	9.9 (9)
	<b>2012</b>	87	86.2 (75)	13.8 (12)
Do you provide nursing home services?	<b>2007</b>	92	88.0 (81)	12.0 (11)
	<b>2012</b>	88	76.1 (67)	23.9 (21)
Do you supervise midlevel care?	<b>2007</b>	91	72.5 (66)	27.5 (25)
	<b>2012</b>	88	81.8 (72)	18.2 (16)
Do you utilize internet databases, journals, e-publications?	<b>2007</b>	91	83.5 (76)	16.5 (15)
	<b>2012</b>	89	94.4 (84)	5.6 (5)
Do you utilize teleconferencing or other interactive technology	<b>2007</b>	90	36.7 (33)	63.3 (57)
	<b>2012</b>	89	51.7 (46)	48.3 (43)
Do you utilize electronic health records for patient care?	<b>2007</b>	91	47.3 (43)	52.7 (48)
	<b>2012</b>	88	80.7 (71)	19.3 (17)
Do you utilize electronic physician education materials?	<b>2007</b>	90	64.4 (58)	35.6 (32)
	<b>2012</b>	89	83.1 (74)	16.9 (15)
Do you plan to maintain board certification in Family Medicine?	<b>2007</b>	87	89.7 (78)	10.3 (9)
	<b>2012</b>	86	90.7 (78)	9.3 (8)
Would you encourage medical students/residents to enter rural family Medicine?	<b>2007</b>	86	88.4 (76)	11.6 (10)
	<b>2012</b>	82	79.3 (65)	20.7 (17)

Table 6  
Overall Results for the Rural Family Medicine Physician Survey  
Survey Questions with Satisfaction Answers

<b>Survey Question</b>	<b>Year</b>	<b>N</b>	<b>Very Satisfied % (N)</b>	<b>Satisfied % (N)</b>	<b>Unsatisfied % (N)</b>	<b>Very Unsatisfied % (N)</b>
How satisfied are you with your compensation for patient care?	<b>2007</b>	92	23.9 (22)	45.7 (42)	27.2 (25)	3.3 (3)
	<b>2012</b>	84	23.8 (20)	54.8 (46)	19.0 (16)	2.4 (2)
How satisfied are you with your malpractice coverage arrangement?	<b>2007</b>	92	23.9 (22)	55.4 (51)	18.5 (17)	2.2 (2)
	<b>2012</b>	86	40.7 (35)	55.8 (48)	3.5 (3)	0.0 (0)
How satisfied are you with your ability to arrange coverage for vacation or leave?	<b>2007</b>	92	35.9 (33)	50.0 (46)	12.0 (11)	2.2 (2)
	<b>2012</b>	85	38.8 (33)	44.7 (38)	14.1 (12)	2.4 (2)
How satisfied are you with the ability of your hospital to recruit qualified Family Medicine physicians?	<b>2007</b>	86	14.0 (12)	39.5 (34)	41.9 (36)	4.7 (4)
	<b>2012</b>	80	11.3 (9)	51.3 (41)	25.0 (20)	12.5 (10)
Overall, how satisfied are you with your current practice?	<b>2007</b>	92	28.3 (26)	64.1 (59)	6.5 (6)	1.1 (1)
	<b>2012</b>	85	32.9 (28)	60.0 (51)	7.1 (6)	0.0 (0)

Table 7  
Comparative Results by Gender for the Rural Family Medicine Physician Survey  
Survey Questions with Numerical Answers

Survey Question	Year	Gender	N	Mean (1)	Mann-Whitney U (2)	p value
Age in years?	2007	Female	21	42.0	467.5	0.012
		Male	70	48.7		
	2012	Female	20	45.6	523.5	0.101
		Male	69	49.9		
Years in practice post residency?	2007	Female	21	10.8	441.0	0.006
		Male	70	17.4		
	2012	Female	20	13.7	517.0	0.089
		Male	69	18.2		
Years at this practice site?	2007	Female	21	7.2	411.5	0.002
		Male	70	14.4		
	2012	Female	20	7.8	418.0	0.007
		Male	69	14.1		
Future years anticipated to be at this practice site?	2007	Female	16	11.3	404.5	0.377
		Male	59	13.7		
	2012	Female	16	9.5	409.0	0.364
		Male	60	12.0		
Future years anticipated to be in practice at any site?	2007	Female	19	17.6	554.0	0.621
		Male	63	16.5		
	2012	Female	17	15.9	504.5	0.645
		Male	64	15.4		
Proximity of practice site to residency training site in miles?	2007	Female	19	894.0	579.0	0.491
		Male	68	631.1		
	2012	Female	20	821.3	610.5	0.613
		Male	66	773.4		
Proximity of practice site to hometown or extended family in miles	2007	Female	18	1120.4	551.0	0.463
		Male	69	777.9		
	2012	Female	19	768.7	600.5	0.708
		Male	67	690.3		
On average, how many hours per week do you provide direct patient care?	2007	Female	21	40.3	547.0	0.075
		Male	70	45.2		
	2012	Female	20	34.4	413.0	0.013
		Male	65	43.0		
On average, how many hours per week are you on call for any service?	2007	Female	20	32.8	438.0	0.058
		Male	61	42.2		
	2012	Female	16	43.9	457.5	0.510
		Male	64	49.2		
On average, how many clinic patients do you see per week?	2007	Female	20	69.8	400.0	0.006
		Male	67	93.9		
	2012	Female	19	70.1	505.0	0.398
		Male	61	76.9		

(1) Mean values are portrayed for ease of interpretation instead of Mean Rank values utilized in Mann-Whitney U tests.

(2) Mann-Whitney U statistic utilized due to low sample size of administrator subgroup.

Table 8  
Comparative Results by Gender for the Rural Family Medicine Physician Survey  
Survey Questions with Dichotomous Answers

Survey Question	Year	Gender	N	Yes %	Chi-Square Statistic	p value (1)
Employed Group (Employed coded as "Yes")	2007	Female	21	52.4	4.90	0.027
		Male	68	26.5		
	2012	Female	17	58.8	1.34	0.246
		Male	65	43.1		
Age Group ( $\leq 48$ years old coded as "Yes")	2007	Female	21	66.7	2.84	0.092
		Male	70	45.7		
	2012	Female	20	55.0	0.83	0.363
		Male	69	43.5		
Any medical school/residency training in Idaho?	2007	Female	21	28.6	0.37	0.545
		Male	70	35.7		
	2012	Female	20	65.0	4.49	0.034
		Male	68	38.2		
Any service obligation or loan repayment at current site?	2007	Female	21	28.6	(2)	0.548
		Male	70	20.0		
	2012	Female	20	25.0	0.01	0.946
		Male	66	25.8		
Do you provide prenatal care?	2007	Female	21	52.4	0.25	0.615
		Male	70	58.6		
	2012	Female	20	60.0	4.22	0.040
		Male	67	34.3		
Do you provide vaginal delivery?	2007	Female	21	42.9	0.85	0.358
		Male	70	54.3		
	2012	Female	20	55.0	5.49	0.019
		Male	67	26.9		
Do you provide C-section?	2007	Female	21	28.6	0.70	0.403
		Male	70	38.6		
	2012	Female	19	31.6	(2)	0.548
		Male	65	23.1		
Do you provide other OR services?	2007	Female	21	19.0	6.32	0.012
		Male	70	50.0		
	2012	Female	19	36.8	0.30	0.583
		Male	63	30.2		
Do you provide EGD or colonoscopy?	2007	Female	21	0.0	(2)	0.005
		Male	67	28.4		
	2012	Female	20	0.0	(2)	0.018
		Male	66	22.7		
Do you provide ER coverage?	2007	Female	21	38.1	1.15	0.284
		Male	70	51.4		
	2012	Female	20	15.0	6.63	0.010
		Male	68	47.1		
Do you provide inpatient admissions?	2007	Female	20	85.0	(2)	0.688
		Male	69	89.9		
	2012	Female	20	70.0	(2)	0.360
		Male	67	80.6		

Survey Question	Year	Gender	N	Yes %	Chi-Square Statistic	p value (1)
Do you provide mental health services?	2007	Female	21	90.5	(2)	1.000
		Male	69	89.9		
	2012	Female	20	85.0	(2)	1.000
		Male	67	86.6		
Do you provide nursing home services?	2007	Female	21	81.0	(2)	0.270
		Male	70	90.0		
	2012	Female	20	65.0	(2)	0.234
		Male	68	79.4		
Do you supervise midlevel care?	2007	Female	21	76.2	0.22	0.643
		Male	69	71.0		
	2012	Female	20	95.0	(2)	0.106
		Male	68	77.9		
Do you utilize internet databases, journals, e-publications?	2007	Female	20	100.0	(2)	0.034
		Male	70	80.0		
	2012	Female	20	100.0	(2)	0.583
		Male	69	92.8		
Do you utilize teleconferencing or other interactive technology?	2007	Female	19	42.1	0.26	0.609
		Male	70	35.7		
	2012	Female	20	40.0	1.41	0.235
		Male	69	55.1		
Do you utilize electronic health records for or patient care?	2007	Female	20	45.0	0.08	0.778
		Male	70	48.6		
	2012	Female	20	80.0	(2)	1.000
		Male	68	80.9		
Do you utilize electronic physician education materials?	2007	Female	20	90.0	7.01	0.008
		Male	69	58.0		
	2012	Female	20	90.0	(2)	0.505
		Male	69	81.2		
Do you plan to maintain board certification in Family Medicine?	2007	Female	19	94.7	(2)	0.677
		Male	67	88.1		
	2012	Female	20	100.0	(2)	0.189
		Male	66	87.9		
Would you encourage medical students/residents to enter rural family Medicine?	2007	Female	20	95.0	(2)	0.679
		Male	65	87.7		
	2012	Female	19	78.9	(2)	1.000
		Male	63	79.4		

(1) 2-sided test

(2) Fischer's Exact test (2-sided) utilized due to cell count minimums.

Table 9  
Comparative Results by Gender for the Rural Family Medicine Physician Survey  
Survey Questions with Collapsed Satisfaction Answers

Survey Question	Year	Gender	N	Satisfied %	Chi-Square Statistic	p value (2)
How satisfied are you with your compensation for patient care?	2007	Female	21	57.1	1.87	0.171
		Male	70	72.9		
	2012	Female	19	84.2	(3)	0.751
		Male	65	76.9		
How satisfied are you with your malpractice coverage arrangement?	2007	Female	21	90.5	(3)	0.222
		Male	70	75.7		
	2012	Female	20	100.0	(3)	1.000
		Male	66	95.5		
How satisfied are you with your ability to arrange coverage for vacation or leave?	2007	Female	21	90.5	(3)	0.725
		Male	70	84.3		
	2012	Female	20	85.0	(3)	1.000
		Male	65	83.1		
How satisfied are you with the ability of your hospital to recruit qualified Family Medicine physicians?	2007	Female	19	68.4	2.35	0.125
		Male	66	48.5		
	2012	Female	19	68.4	0.37	0.542
		Male	61	60.7		
Overall, how satisfied are you with your current practice?	2007	Female	21	90.5	(3)	0.660
		Male	70	92.9		
	2012	Female	20	90.0	(3)	0.622
		Male	65	93.8		

(1) Satisfaction answers were collapsed into two categories; "Satisfied" which includes the Very Satisfied and Satisfied responses, and "Unsatisfied" which includes the Very Unsatisfied and Unsatisfied responses.

(2) 2-sided test

(3) Fischer's Exact test (2-sided) utilized due to cell count minimums.

Table 10  
Comparative Results by Age Group for the Rural Family Medicine Physician Survey  
Survey Questions with Numerical Answers

Survey Question	Year	Age Group	N	Mean	t (1)	p value (2)
Years in practice post residency?	2007	≤48 years old	46	7.1	-12.61 (1)	< 0.001
		> 49 years old	46	24.8		
	2012	≤48 years old	41	9.1	-10.27	< 0.001
		> 49 years old	48	24.1		
Years at this practice site?	2007	≤48 years old	46	5.9	-8.74 (1)	< 0.001
		> 49 years old	46	19.8		
	2012	≤48 years old	41	7.8	-5.25 (1)	< 0.001
		> 49 years old	48	16.9		
Future years anticipated to be at this practice site?	2007	≤48 years old	35	17.1	4.46 (1)	< 0.001
		> 49 years old	41	9.8		
	2012	≤48 years old	33	16.2	4.90 (1)	< 0.001
		> 49 years old	43	7.8		
Future years anticipated to be in practice at any site?	2007	≤48 years old	42	21.8	7.08	< 0.001
		> 49 years old	41	11.4		
	2012	≤48 years old	38	22.2	7.74 (1)	< 0.001
		> 49 years old	43	9.6		
Proximity of practice site to residency training site in miles?	2007	≤48 years old	43	694.2	-0.14	0.888
		> 49 years old	45	716.7		
	2012	≤48 years old	39	756.3	-0.28	0.777
		> 49 years old	47	807.9		
Proximity of practice site to hometown or extended family in miles (2)	2007	≤48 years old	43	949.0	0.82 (1)	0.413
		> 49 years old	45	778.5		
	2012	≤48 years old	39	696.6	-0.11	0.911
		> 49 years old	47	716.7		
On average, how many hours per week to you provide direct patient care?	2007	≤48 years old	46	45.7	1.15	0.255
		> 49 years old	46	42.8		
	2012	≤48 years old	39	42.2	0.87	0.387
		> 49 years old	46	39.8		
On average, how many hours per week are you on call for any service?	2007	≤48 years old	39	34.4	-1.49	0.139
		> 49 years old	43	45.1		
	2012	≤48 years old	36	48.8	0.10	0.917
		> 49 years old	44	47.7		
On average, how many clinic patients do you see per week?	2007	≤48 years old	45	81.0	-1.98 (1)	0.052
		> 49 years old	43	96.3		
	2012	≤48 years old	39	79.7	1.24	0.220
		> 49 years old	41	71.0		

(1) Unequal variance model utilized

(2) 2-sided test

Table 11  
Comparative Results by Age Group for the Rural Family Medicine Physician Survey  
Survey Questions with Dichotomous Answers

Survey Question	Year	Age Group	N	Yes %	Chi-Square Statistic	p value (1)
Employed Group (Employed coded as "Yes")	2007	≤48 years old	45	48.9	9.80	0.002
		>49 years old	45	17.8		
	2012	≤48 years old	37	45.9	< 0.01	0.948
		>49 years old	45	46.7		
Gender (Female coded as "Yes")	2007	≤48 years old	46	30.4	2.84	0.092
		>49 years old	45	15.6		
	2012	≤48 years old	41	26.8	0.83	0.363
		>49 years old	48	18.8		
Any medical school/residency training in Idaho?	2007	≤48 years old	46	54.6	17.56	< 0.001
		>49 years old	46	13.0		
	2012	≤48 years old	40	47.5	0.30	0.583
		>49 years old	48	41.7		
Any service obligation or loan repayment at current site?	2007	≤48 years old	46	43.5	25.56	< 0.001
		>49 years old	46	0.0		
	2012	≤48 years old	39	41.0	8.9	0.003
		>49 years old	47	12.8		
Do you provide prenatal care?	2007	≤48 years old	46	71.7	7.52	0.006
		>49 years old	46	43.5		
	2012	≤48 years old	41	48.8	2.36	0.125
		>49 years old	46	32.6		
Do you provide vaginal delivery?	2007	≤48 years old	46	65.2	6.27	0.012
		>49 years old	46	39.1		
	2012	≤48 years old	41	41.5	2.31	0.129
		>49 years old	46	26.1		
Do you provide C-section?	2007	≤48 years old	46	41.3	0.75	0.388
		>49 years old	46	32.6		
	2012	≤48 years old	40	27.5	0.26	0.614
		>49 years old	44	22.7		
Do you provide other OR services?	2007	≤48 years old	46	43.5	0.00	1.000
		>49 years old	46	43.5		
	2012	≤48 years old	38	28.9	0.25	0.618
		>49 years old	44	34.1		
Do you provide EGD or colonoscopy?	2007	≤48 years old	46	28.3	1.83	0.176
		>49 years old	43	16.3		
	2012	≤48 years old	40	22.5	1.33	0.249
		>49 years old	46	13.0		
Do you provide ER coverage?	2007	≤48 years old	46	56.5	2.13	0.144
		>49 years old	46	41.3		
	2012	≤48 years old	41	34.1	1.01	0.314
		>49 years old	47	44.7		
Do you provide inpatient admissions?	2007	≤48 years old	45	95.6	4.05	0.044
		>49 years old	45	82.2		
	2012	≤48 years old	41	95.1	13.07	< 0.001
		>49 years old	46	63.0		

Survey Question	Year	Age Group	N	Yes %	Chi-Square Statistic	p value (1)
Do you provide mental health services?	2007	≤48 years old	46	93.5	(2)	0.315
		> 49 years old	45	86.7		
	2012	≤48 years old	41	97.6	8.41	0.004
		> 49 years old	46	76.1		
Do you provide nursing home services?	2007	≤48 years old	46	91.3	0.93	0.335
		> 49 years old	46	84.8		
	2012	≤48 years old	41	80.5	0.80	0.371
		> 49 years old	47	72.3		
Do you supervise midlevel care?	2007	≤48 years old	46	78.3	1.54	0.215
		> 49 years old	45	66.7		
	2012	≤48 years old	41	90.2	3.66	0.056
		> 49 years old	47	74.5		
Do you utilize internet databases, journals, e-publications?	2007	≤48 years old	46	91.3	4.10	0.043
		> 49 years old	45	75.6		
	2012	≤48 years old	41	97.6	(2)	0.369
		> 49 years old	48	91.7		
Do you utilize teleconferencing or other interactive technology?	2007	≤48 years old	46	39.1	0.25	0.620
		> 49 years old	45	34.1		
	2012	≤48 years old	41	51.2	0.01	1.000
		> 49 years old	48	52.1		
Do you utilize electronic health records for or patient care?	2007	≤48 years old	46	50.0	0.28	0.596
		> 49 years old	45	44.4		
	2012	≤48 years old	41	80.5	< 0.01	0.966
		> 49 years old	47	80.9		
Do you utilize electronic physician education materials?	2007	≤48 years old	45	73.3	3.10	0.078
		> 49 years old	45	55.6		
	2012	≤48 years old	41	90.2	2.73	0.098
		> 49 years old	48	77.1		
Do you plan to maintain board certification in Family Medicine?	2007	≤48 years old	46	97.8	(2)	0.011
		> 49 years old	41	80.5		
	2012	≤48 years old	39	94.9	(2)	0.283
		> 49 years old	47	87.2		
Would you encourage medical students/residents to enter rural family Medicine?	2007	≤48 years old	45	88.9	(2)	1.000
		> 49 years old	41	87.8		
	2012	≤48 years old	38	86.8	2.47	0.116
		> 49 years old	44	72.7		

(1) 2-sided test

(2) Fischer's Exact test (2-sided) utilized due to cell count minimums.

Table 12  
Comparative Results by Age Group for the Rural Family Medicine Physician Survey  
Survey Questions with Collapsed Satisfaction Answers

Survey Question	Year	Age Group	N	Satisfied %	Chi-Square Statistic	p value (2)
How satisfied are you with your compensation for patient care?	2007	≤ 48 years old	46	69.6	0.00	1.000
		> 49 years old	46	69.6		
	2012	≤ 48 years old	39	79.5	0.04	0.849
		> 49 years old	45	77.8		
How satisfied are you with your malpractice coverage arrangement?	2007	≤ 48 years old	46	82.6	0.60	0.440
		> 49 years old	46	76.1		
	2012	≤ 48 years old	39	100.0	(3)	0.248
		> 49 years old	47	93.6		
How satisfied are you with your ability to arrange coverage for vacation or leave?	2007	≤ 48 years old	46	89.1	0.81	0.369
		> 49 years old	46	82.6		
	2012	≤ 48 years old	39	82.1	0.11	0.735
		> 49 years old	46	84.8		
How satisfied are you with the ability of your hospital to recruit qualified Family Medicine physicians?	2007	≤ 48 years old	44	59.1	1.14	0.286
		> 49 years old	42	47.6		
	2012	≤ 48 years old	38	65.8	0.33	0.563
		> 49 years old	42	59.5		
Overall, how satisfied are you with your current practice?	2007	≤ 48 years old	46	95.7	(3)	0.434
		> 49 years old	46	89.1		
	2012	≤ 48 years old	38	97.4	(3)	0.218
		> 49 years old	47	89.4		

(1) Satisfaction answers were collapsed into two categories; "Satisfied" which includes the Very Satisfied and Satisfied responses, and "Unsatisfied" which includes the Very Unsatisfied and Unsatisfied responses.

(2) 2-sided test

(3) Fischer's Exact test (2-sided) utilized due to cell count minimums.

Table 13  
Comparative Results by Employment Group for the Rural Family Medicine Physician Survey  
Survey Questions with Numerical Answers

Survey Question	Year	Employment group	N	Mean	t (1) (2)	p value (3)
Age in years?	2007	Employed	30	40.7	-4.38	< 0.001
		Not Employed	60	50.3		
	2012	Employed	38	48.6	-0.31	0.758
		Not Employed	44	49.3		
Years in practice post residency?	2007	Employed	30	9.1	-5.17 (2)	< 0.001
		Not Employed	60	19.4		
	2012	Employed	38	16.3	-0.92	0.361
		Not Employed	44	18.4		
Years at this practice site?	2007	Employed	30	6.7	-5.45 (2)	< 0.001
		Not Employed	60	16.2		
	2012	Employed	38	10.0	-2.51	0.014
		Not Employed	44	15.2		
Future years anticipated to be at this practice site?	2007	Employed	25	14.3	0.83	0.409
		Not Employed	50	12.7		
	2012	Employed	30	10.7	-0.49	0.627
		Not Employed	40	11.7		
Future years anticipated to be in practice at any site?	2007	Employed	28	21.1	3.55	0.001
		Not Employed	54	14.6		
	2012	Employed	35	16.6	1.08	0.284
		Not Employed	39	14.2		
Proximity of practice site to residency training site in miles?	2007	Employed	28	792.1	0.98	0.328
		Not Employed	58	627.9		
	2012	Employed	36	920.2	1.69	0.094
		Not Employed	43	612.2		
Proximity of practice site to hometown or extended family in miles (2)	2007	Employed	27	1017.7	0.95	0.343
		Not Employed	59	802.8		
	2012	Employed	36	727.9	-0.22	0.825
		Not Employed	44	769.8		
On average, how many hours per week to you provide direct patient care?	2007	Employed	30	47.2	1.44	0.152
		Not Employed	60	43.4		
	2012	Employed	37	40.2	-0.71	0.478
		Not Employed	44	42.2		
On average, how many hours per week are you on call for any service?	2007	Employed	27	45.9	1.07	0.290
		Not Employed	53	37.6		
	2012	Employed	35	48.0	-0.29	0.770
		Not Employed	42	51.3		
On average, how many clinic patients do you see per week?	2007	Employed	28	69.5	-3.76	< 0.001
		Not Employed	58	98.7		
	2012	Employed	35	65.1	-2.71	0.008
		Not Employed	41	83.3		

(1) t-test test statistic utilized, sample size approaches or equals N=30

(2) unequal variance model utilized

(3) 2-sided test

Table 14  
Comparative Results by Employment Group for the Rural Family Medicine Physician Survey  
Survey Questions with Dichotomous Answers

Survey Question	Year	Employment Group	N	Yes %	Chi-Square Statistic	p value (1)
Age Group ( $\leq 48$ years old coded as "Yes")	2007	Employed	30	73.3	9.80	0.002
		Not Employed	60	38.3		
	2012	Employed	38	44.7	< 0.01	0.948
		Not Employed	44	45.5		
	2007	Employed	29	37.9	4.90	0.027
		Not Employed	60	16.7		
	2012	Employed	38	26.3	1.34	0.246
		Not Employed	44	15.9		
Any medical school/residency training in Idaho?	2007	Employed	30	43.3	1.58	0.210
		Not Employed	60	30.0		
	2012	Employed	37	48.6	0.49	0.485
		Not Employed	44	40.9		
Any service obligation or loan repayment at current site?	2007	Employed	30	43.3	11.60	0.001
		Not Employed	60	11.7		
	2012	Employed	35	34.3	1.91	0.167
		Not Employed	44	20.5		
Do you provide prenatal care?	2007	Employed	30	73.3	3.88	0.049
		Not Employed	60	51.7		
	2012	Employed	37	51.4	2.90	0.089
		Not Employed	43	32.6		
Do you provide vaginal delivery?	2007	Employed	30	63.3	1.81	0.179
		Not Employed	60	48.3		
	2012	Employed	37	45.9	3.63	0.057
		Not Employed	43	25.6		
Do you provide C-section?	2007	Employed	30	43.3	0.59	0.442
		Not Employed	60	35.0		
	2012	Employed	35	37.1	4.16	0.041
		Not Employed	42	16.7		
Do you provide other OR services?	2007	Employed	30	36.7	1.10	0.294
		Not Employed	60	48.3		
	2012	Employed	36	44.4	3.85	0.050
		Not Employed	39	23.1		
Do you provide EGD or colonoscopy?	2007	Employed	30	26.7	0.35	0.554
		Not Employed	57	21.1		
	2012	Employed	37	24.3	3.13	0.077
		Not Employed	42	9.5		
Do you provide ER coverage?	2007	Employed	30	70.0	7.20	0.007
		Not Employed	60	40.0		
	2012	Employed	38	60.5	11.61	0.001
		Not Employed	43	23.3		
Do you provide inpatient admissions?	2007	Employed	29	93.1	(2)	1.000
		Not Employed	59	89.8		
	2012	Employed	37	83.8	0.62	0.433
		Not Employed	43	76.7		

Survey Question	Year	Employment Group	N	Yes %	Chi-Square Statistic	p value (1)
Do you provide mental health services?	2007	Employed	30	80.0	(2)	0.016
		Not Employed	59	96.6		
	2012	Employed	37	86.5	< 0.01	0.955
		Not Employed	43	86.0		
Do you provide nursing home services?	2007	Employed	30	80.0	(2)	0.170
		Not Employed	60	91.7		
	2012	Employed	37	75.7	0.17	0.676
		Not Employed	44	79.5		
Do you supervise midlevel care?	2007	Employed	30	86.7	4.27	0.039
		Not Employed	59	66.1		
	2012	Employed	37	83.8	0.54	0.463
		Not Employed	44	77.3		
Do you utilize internet databases, journals, e-publications?	2007	Employed	30	90.0	1.52	0.218
		Not Employed	59	79.7		
	2012	Employed	38	92.1	(2)	0.659
		Not Employed	44	95.5		
Do you utilize teleconferencing or other interactive technology?	2007	Employed	30	60.0	10.99	0.001
		Not Employed	58	24.1		
	2012	Employed	38	44.7	0.46	0.496
		Not Employed	44	52.3		
Do you utilize electronic health records for or patient care?	2007	Employed	30	30.0	6.08	0.014
		Not Employed	59	57.6		
	2012	Employed	37	81.1	0.18	0.675
		Not Employed	44	77.3		
Do you utilize electronic physician education materials?	2007	Employed	30	63.3	0.01	0.921
		Not Employed	59	64.4		
	2012	Employed	38	76.3	2.19	0.139
		Not Employed	44	88.6		
Do you plan to maintain board certification in Family Medicine?	2007	Employed	29	100.0	(2)	0.047
		Not Employed	56	85.7		
	2012	Employed	38	92.1	(2)	0.719
		Not Employed	44	88.6		
Would you encourage medical students/residents to enter rural family Medicine?	2007	Employed	30	93.3	(2)	0.480
		Not Employed	54	87.0		
	2012	Employed	36	75.0	0.40	0.526
		Not Employed	42	81.0		

(1) 2-sided test

(2) Fischer's Exact test (2-sided) utilized due to cell count minimums.

Table 15  
Comparative Results by Employment Group for the Rural Family Medicine Physician Survey  
Survey Questions with Collapsed Satisfaction Answers

Survey Question (1)	Year	Employment Group	N	Satisfied %	Chi-Square Statistic	p value (2)
How satisfied are you with your compensation for patient care?	2007	Employed	30	83.3	3.81	0.051
		Not Employed	60	63.3		
	2012	Employed	37	81.1	0.51	0.477
		Not Employed	43	74.4		
How satisfied are you with your malpractice coverage arrangement?	2007	Employed	30	96.7	8.54	0.003
		Not Employed	60	70.0		
	2012	Employed	38	97.4	(3)	1.000
		Not Employed	44	95.5		
How satisfied are you with your ability to arrange coverage for vacation or leave?	2007	Employed	30	93.3	(3)	0.324
		Not Employed	60	83.3		
	2012	Employed	37	83.8	0.001	0.970
		Not Employed	44	84.1		
How satisfied are you with the ability of your hospital to recruit qualified Family Medicine physicians?	2007	Employed	30	53.3	0.00	0.957
		Not Employed	55	52.7		
	2012	Employed	35	60.0	0.09	0.760
		Not Employed	41	63.4		
Overall, how satisfied are you with your current practice?	2007	Employed	30	100.0	(3)	0.090
		Not Employed	60	88.3		
	2012	Employed	38	89.5	(3)	0.412
		Not Employed	43	95.3		

(1) Satisfaction answers were collapsed into two categories; "Satisfied" which includes the Very Satisfied and Satisfied responses, and "Unsatisfied" which includes the Very Unsatisfied and Unsatisfied responses.

(2) 2-sided test

(3) Fischer's Exact test (2-sided) utilized due to cell count minimums.

Table 16  
Comparative Results by Respondent Group for the Rural Family Medicine Physician Survey  
Survey Questions with Numerical Answers

Survey Question (1)	Year	Respondent Group	N	Mean (2)	Mann-Whitney U (3)	p value
On average, how many hours per week should a Family Medicine physician provide direct patient care?	2007	Administrator Physician	17 92	37.4 44.3	481.5	0.012
	2012	Administrator Physician	18 85	39.3 40.9	722.5	0.709
On average, how many hours per week should a Family Medicine physician be on call for any service?	2007	Administrator Physician	16 82	32.6 40.0	557.5	0.341
	2012	Administrator Physician	15 80	33.7 48.2	578.0	0.822
On average, how many clinic patients should a Family Medicine physician see per week?	2007	Administrator Physician	17 88	89.5 88.5	663.0	0.457
	2012	Administrator Physician	17 80	88.9 75.3	484.5	0.062

(1) Administrator survey question listed; physician survey question requested actual weekly work load.

(2) Mean values are portrayed for ease of interpretation instead of Mean Rank values utilized in Mann-Whitney U tests.

(3) Mann-Whitney U statistic utilized due to low sample size of administrator subgroup.

Table 17  
Comparative Results by Respondent Group for the Rural Family Medicine Physician Survey  
Survey Questions with Collapsed Satisfaction Answers

Survey Question (1)	Year	Respondent Group	N	Satisfied %	Chi-Square Statistic	p value (2)
How satisfied are you with your compensation for patient care?	2007	Administrator Physician	17 92	58.8 69.6	0.76	0.383
	2012	Administrator Physician	19 84	73.7 78.6	(3)	0.761
How satisfied are you with your malpractice coverage arrangement?	2007	Administrator Physician	16 92	93.8 79.3	(3)	0.296
	2012	Administrator Physician	19 86	100.0 96.5	(3)	1.000
How satisfied are you with your ability to arrange coverage for vacation or leave?	2007	Administrator Physician	16 92	75.0 85.9	(3)	0.275
	2012	Administrator Physician	19 85	78.9 83.5	(3)	0.738
How satisfied are you with the ability of your hospital to recruit qualified Family Medicine physicians?	2007	Administrator Physician	16 86	68.8 53.5	1.27	0.259
	2012	Administrator Physician	19 80	57.9 62.5	0.14	0.711

(1) Satisfaction answers were collapsed into two categories; "Satisfied" which includes the Very Satisfied and Satisfied responses, and "Unsatisfied" which includes the Very Unsatisfied and Unsatisfied responses.

(2) 2-sided test

(3) Fischer's Exact test (2-sided) utilized due to cell count minimums.

Table 18  
Comparative Results by Year for the Rural Family Medicine Physician Survey  
Survey Questions with Numerical Answers

Survey Question	Year	N	Mean	t (1)	p value (3)
Age in years?	2007	92	47.2	-1.08	0.282
	2012	89	48.9		
Years in practice post residency?	2007	92	16.0	-0.77	0.444
	2012	89	17.2		
Years at this practice site?	2007	92	12.9	0.12	0.905
	2012	89	12.7		
Future years anticipated to be at this practice site?	2007	76	13.1	1.31	0.191
	2012	76	11.4		
Future years anticipated to be in practice at any site?	2007	83	16.7	0.83	0.411
	2012	81	15.5		
Proximity of practice site to residency training site in miles?	2007	88	705.7	-0.66	0.511
	2012	86	784.5		
Proximity of practice site to hometown or extended family in miles?	2007	88	861.8	1.14	0.258
	2012	86	707.6		
On average, how many hours per week to you provide direct patient care?	2007	92	44.3	1.79	0.075
	2012	85	40.9		
On average, how many hours per week are you on call for any service?	2007	82	40.0	-1.27 (2)	0.208
	2012	80	48.2		
On average, how many clinic patients do you see per week?	2007	88	88.5	2.51	0.013
	2012	80	75.3		

- (1) t-test test statistic utilized,  
sample size approaches or equals N=30  
(2) unequal variance model utilized  
(3) 2-sided test

Table 19  
Comparative Results by Year for the Rural Family Medicine Physician Survey  
Survey Questions with Dichotomous Answers

Survey Question	Year	N	Yes (%)	Chi-Square Statistic	p value (1)
Gender (Female coded as "Yes")	2007	91	23.1	0.01	0.923
	2012	89	22.5		
Employed Group (Employed coded as "Yes")	2007	90	33.3	3.04	0.081
	2012	82	46.3		
Any medical school/residency training in Idaho?	2007	92	33.7	2.14	0.144
	2012	88	44.3		
Any service obligation or loan repayment at current site?	2007	92	21.7	0.36	0.546
	2012	86	25.6		
Do you provide prenatal care?	2007	92	57.6	5.40	0.020
	2012	87	40.2		
Do you provide vaginal delivery?	2007	92	52.2	6.48	0.011
	2012	87	33.3		
Do you provide C-section?	2007	92	37.0	2.92	0.087
	2012	84	25.0		
Do you provide other OR services?	2007	92	43.5	2.55	0.110
	2012	82	31.7		
Do you provide EGD or colonoscopy?	2007	89	22.5	0.69	0.406
	2012	86	17.4		
Do you provide ER coverage?	2007	92	48.9	1.52	0.217
	2012	88	39.8		
Do you provide inpatient admissions?	2007	90	88.9	3.72	0.054
	2012	87	78.2		
Do you provide mental health services?	2007	91	90.1	0.65	0.420
	2012	87	86.2		
Do you provide nursing home services?	2007	92	88.0	4.36	0.037
	2012	88	76.1		
Do you supervise midlevel care?	2007	91	72.5	2.19	0.139
	2012	88	81.8		
Do you utilize internet databases, journals, e-publications?	2007	91	83.5	5.38	0.020
	2012	89	94.4		
Do you utilize teleconferencing or other interactive technology?	2007	90	36.7	4.09	0.043
	2012	89	51.7		
Do you utilize electronic health records for or patient care?	2007	91	47.3	21.62	< 0.001
	2012	88	80.7		
Do you utilize electronic physician education materials?	2007	90	64.4	8.08	0.004
	2012	89	83.1		
Do you plan to maintain board certification in Family Medicine?	2007	87	89.7	0.05	0.818
	2012	86	90.7		
Would you encourage medical students/residents to enter rural family Medicine?	2007	86	88.4	2.58	0.108
	2012	82	79.3		

(1) 2-sided test

Table 20  
Comparative Results by Year for the Rural Family Medicine Physician Survey  
Survey Questions with Collapsed Satisfaction Answers

Survey Question (1)	Year	N	Satisfied %	Chi-Square Statistic	p value (2)
How satisfied are you with your compensation for patient care?	2007	92	69.6	1.85	0.174
	2012	84	78.6		
How satisfied are you with your malpractice coverage arrangement?	2007	92	79.3	12.09	0.001
	2012	86	96.5		
How satisfied are you with your ability to arrange coverage for vacation or leave?	2007	92	85.9	0.19	0.665
	2012	85	83.5		
How satisfied are you with the ability of your hospital to recruit qualified Family Medicine physicians?	2007	86	53.5	1.38	0.240
	2012	80	62.5		
Overall, how satisfied are you with your current practice?	2007	92	92.4	0.02	0.889
	2012	85	92.9		

(1) Satisfaction answers were collapsed into two categories; "Satisfied" which includes the Very Satisfied and Satisfied responses, and "Unsatisfied" which includes the Very Unsatisfied and Unsatisfied responses.

(2) 2-sided test

Table 21  
Comparative Results by Year for the Rural Family Medicine Administrator Survey  
Survey Questions with Numerical Answers

Survey Question	Year	N	Mean (1)	Mann- Whitney U (2)	p value (3)
Full-time equivalent family medicine physicians on staff	<b>2007</b>	18	4.83	139.0	0.229
	<b>2012</b>	20	6.17		
Full-time equivalent family medicine physicians currently recruiting for	<b>2007</b>	18	0.78	170.5	0.987
	<b>2012</b>	19	0.68		
Proximity of practice site to nearest hospital with higher scope of services in miles:	<b>2007</b>	17	58.29	127.0	0.273
	<b>2012</b>	19	44.89		
On average, how many hours per week should a family medicine physician provide direct patient care	<b>2007</b>	17	37.35	114.0	0.184
	<b>2012</b>	18	39.33		
On average, how many hours per week should a family medicine physician be on call for any service	<b>2007</b>	16	32.63	110.0	0.690
	<b>2012</b>	15	33.71		
On average, how many clinic patients should a family medicine physician see per week?	<b>2007</b>	17	89.47	123.5	0.462
	<b>2012</b>	17	88.94		

- (1) Mean values are portrayed for ease of interpretation instead of Mean Rank values utilized in Mann-Whitney U tests.
- (2) Mann-Whitney U statistic employed due to low sample size of administrator subgroup
- (3) 2-sided test

Table 22  
Comparative Results by Year for the Rural Family Medicine Administrator Survey  
Survey Questions with Dichotomous Answers

Survey Question	Year	N	Yes (%)	Chi-Square Statistic	p value (1)
Any current opportunity for loan repayment?	2007	18	61.1	0.22	0.642
	2012	19	68.4		
Do Family Medicine physicians provide prenatal care?	2007	18	83.3	(2)	0.697
	2012	20	75.0		
Do Family Medicine physicians provide vaginal delivery?	2007	19	63.2	0.01	0.905
	2012	20	65.0		
Do Family Medicine physicians provide C-section?	2007	19	57.9	0.02	0.894
	2012	20	60.0		
Do Family Medicine physicians provide other OR services?	2007	19	52.6	0.62	0.433
	2012	20	65.0		
Do Family Medicine physicians provide EGD or colonoscopy?	2007	18	50.0	0.87	0.350
	2012	20	65.0		
Do Family Medicine physicians provide ER coverage?	2007	19	68.4	0.01	0.915
	2012	20	70.0		
Do Family Medicine physicians provide inpatient admissions?	2007	18	100	NA (3)	NA (3)
	2012	20	100		
Do Family Medicine physicians provide mental health services?	2007	19	42.1	0.42	0.516
	2012	19	52.6		
Do Family Medicine physicians provide nursing home services?	2007	19	94.7	(2)	1.000
	2012	20	95.0		
Do Family Medicine physicians supervise midlevel care?	2007	19	78.9	(2)	0.407
	2012	20	90.0		
Do Family Medicine physicians utilize internet databases, journals, e-publications?	2007	18	94.4	(2)	1.000
	2012	20	95.0		
Do Family Medicine physicians utilize teleconferencing or other interactive technology?	2007	18	66.7	(2)	0.124
	2012	19	89.5		
Do Family Medicine physicians utilize electronic health records for patient care?	2007	18	61.1	(2)	0.016
	2012	20	95.0		
Do Family Medicine physicians utilize electronic physician education materials?	2007	16	93.8	(2)	1.000
	2012	20	95.0		
Do you require Family Medicine physicians to maintain board certification in Family Medicine?	2007	18	61.1	0.01	0.944
	2012	20	60.0		
Would you support educational opportunities for medical students and/or residents at your site?	2007	18	100	NA (3)	NA (3)
	2012	19	100		

(1) 2-sided test

(2) Fischer's Exact test (2-sided) utilized due to cell count minimums.

(3) Chi-Square statistic is not computed due to value of 100 percent

Table 23  
Comparative Results by Year for the Rural Family Medicine Administrator Survey  
Survey Questions with Collapsed Satisfaction Answers

Survey Question (1)	Year	N	Satisfied %	Chi-Square Statistic	p value (3)
How satisfied is your hospital with family medicine physician compensation for patient care?	2007	17	58.8	0.89	0.345
	2012	19	73.7		
How satisfied are you with your malpractice coverage arrangement for family medicine physicians?	2007	16	93.8	(2)	0.457
	2012	19	100.0		
How satisfied are you with your ability to arrange coverage for vacation or leave for family medicine physicians?	2007	16	75.0	(2)	1.000
	2012	19	78.9		
How satisfied are you with the ability of your hospital to recruit qualified family medicine physicians?	2007	16	68.8	0.44	0.508
	2012	19	57.9		
How satisfied are you with family medicine physician turnover at your site?	2007	18	77.8	(2)	0.395
	2012	20	90.0		
Overall, how satisfied are you with your current family medicine physician staff?	2007	18	94.4	(2)	1.000
	2012	20	90.0		

(1) Satisfaction answers were collapsed into two categories; "Satisfied" which includes the Very Satisfied and Satisfied responses, and "Unsatisfied" which includes the Very Unsatisfied and Unsatisfied responses.

(2) Fischer's Exact test (2-sided) utilized due to cell count minimums.

(3) 2-sided test

# Appendices

Appendix A: Hospital Administrator Survey

Appendix B: Hospital Administrator Cover Letter and Survey E-mail Notification Documents

Appendix C: Rural Family Medicine Physician Survey

Appendix D: Rural Family Medicine Physician Cover Letter and Survey E-mail Notification Documents

# Appendix A

## Hospital Administrator Survey

**Hospital Administrator Survey**

1. Full-time equivalent family medicine physicians on staff: \_\_\_\_\_
2. Full-time equivalent family medicine physicians currently recruiting for: \_\_\_\_\_
3. Any current opportunity for loan repayment? **Yes** **No** (circle one)
4. Proximity of practice site to nearest hospital with higher scope of services in miles:  
\_\_\_\_\_
5. Do family medicine physicians provide the following services? (circle Yes or No for each question)  

Prenatal care .....	<b>Yes</b>	<b>No</b>
Vaginal delivery .....	<b>Yes</b>	<b>No</b>
C-section .....	<b>Yes</b>	<b>No</b>
Other OR services .....	<b>Yes</b>	<b>No</b>
EGD or colonoscopy .....	<b>Yes</b>	<b>No</b>
ER coverage .....	<b>Yes</b>	<b>No</b>
Inpatient admissions .....	<b>Yes</b>	<b>No</b>
Mental health .....	<b>Yes</b>	<b>No</b>
Nursing home .....	<b>Yes</b>	<b>No</b>
6. Do family medicine physicians supervise midlevel care? **Yes** **No** (circle one)
7. Do family medicine physicians utilize: (circle Yes or No for each question)  

Internet databases, journals, e-publications .....	<b>Yes</b>	<b>No</b>
Teleconferencing or other interactive technology.....	<b>Yes</b>	<b>No</b>
Electronic health records for patient care.....	<b>Yes</b>	<b>No</b>
Electronic physician education materials .....	<b>Yes</b>	<b>No</b>
8. On average, how many hours per week should a family medicine physician provide direct patient care? \_\_\_\_\_
9. On average, how many hours per week should a family medicine physician be on call for any service? \_\_\_\_\_
10. On average, how many clinic patients should a family medicine physician see per week?  
\_\_\_\_\_
11. What is your employment/business relationship model for family medicine physicians?  
\_\_\_\_\_

12. How satisfied is your hospital with family medicine physician compensation for patient care? (check one)

**Very Satisfied** \_\_\_\_\_ **Satisfied** \_\_\_\_\_ **Unsatisfied** \_\_\_\_\_ **Very Unsatisfied** \_\_\_\_\_

13. How satisfied are you with your malpractice coverage arrangement for family medicine physicians? (check one)

**Very Satisfied** \_\_\_\_\_ **Satisfied** \_\_\_\_\_ **Unsatisfied** \_\_\_\_\_ **Very Unsatisfied** \_\_\_\_\_

14. How satisfied are you with your ability to arrange coverage for vacation or leave for family medicine physicians? (check one)

**Very Satisfied** \_\_\_\_\_ **Satisfied** \_\_\_\_\_ **Unsatisfied** \_\_\_\_\_ **Very Unsatisfied** \_\_\_\_\_

15. How satisfied are you with the ability of your hospital to recruit qualified family medicine physicians? (check one)

**Very Satisfied** \_\_\_\_\_ **Satisfied** \_\_\_\_\_ **Unsatisfied** \_\_\_\_\_ **Very Unsatisfied** \_\_\_\_\_

16. How satisfied are you with family medicine physician turnover at your site? (check one)

**Very Satisfied** \_\_\_\_\_ **Satisfied** \_\_\_\_\_ **Unsatisfied** \_\_\_\_\_ **Very Unsatisfied** \_\_\_\_\_

17. What is the single most significant barrier for full recruitment of qualified family medicine physicians?

\_\_\_\_\_

\_\_\_\_\_

18. Do you require family medicine physicians to maintain board certification in family medicine? **Yes** **No** (circle one)

19. Overall, how satisfied are you with your current family medicine physician staff? (check one)

**Very Satisfied** \_\_\_\_\_ **Satisfied** \_\_\_\_\_ **Unsatisfied** \_\_\_\_\_ **Very Unsatisfied** \_\_\_\_\_

20. Would you support educational opportunities for medical students and or residents at your site? **Yes** **No** (circle one)

*Thank you for taking the time to fill out this survey. The Idaho Hospital Association will share the results with you after these data are analyzed and a report is completed. Please use the postage paid envelope to return this survey to Boise State University. The researchers thank the Idaho Academy of Family Physician, Inc. and the Idaho Hospital Association for their assistance in this project and the Idaho Department of Health and Welfare, Office of Rural Health and Primary Care for funding this research.*

## Appendix B

Hospital Administrator Survey Cover Letter and E-mail Notification Documents

(Cover letter for Hospital Administrator Survey)

IHA Letterhead

Date

Name of Administrator

Title

Name of Hospital

Hospital Address

Dear Name:

Your association has agreed to assist in the facilitation of a research study of factors associated with recruitment and retention of family medicine physicians in Idaho. Information from this study will be used to develop strategies to increase the number of family medicine physicians serving in Idaho. Funding for this study is provided by the Idaho Department of Health and Welfare – Office of Rural Health and Primary Care, through a federal grant from the U.S. Department of Health and Human Services, Health Resources and Services Administration. The Center for Health Policy of the College of Health Sciences at Boise State University and the Family Medicine Residency of Idaho are responsible for the conduct of this research. The Idaho Academy of Family Physicians, Inc. and the Idaho Hospital Association are partners in this research.

Please take a few minutes to answer the questions on the survey that accompanies this letter and then return it to Boise State University in the postage-paid envelope by October 16, 2012 in order to be included in the summary results. Participation in this survey is voluntary. Be advised that your answers will be anonymous and the data from the surveys will only be released in aggregate form. In addition, limited information on demographic factors which could specifically identify an institution will be obtained and every effort will be made to protect participants' confidentiality. If you are uncomfortable answering any of these questions, you may leave them blank.

If you have any questions about these confidentiality issues, or any other research question, please contact Ed Baker, Ph.D., Director, Center for Health Policy at Boise State University, at 208-426-3118 or David Schmitz, M.D., Associate Director of Rural Family Medicine at the Family Medicine Residency of Idaho at 208-921-6360. If you have questions about your rights as a research participant, you may contact the Boise State University Institutional Review Board (IRB), which is concerned with the protection of volunteers in research projects. You may reach the board office between 8:00 AM and 5:00 PM, Monday through Friday, by calling (208) 426-5401 or by writing: Institutional Review Board, Office of Research Compliance, Boise State University, 1910 University Dr., Boise, ID 83725-1138.

Thank you in advance for helping us learn more about recruitment and retention issues for family medicine physicians impacting hospitals in Idaho. This research is important in maintaining access to quality health care and is directly related to the health status of communities in Idaho. The results of this study will be available through the Idaho Hospital Association in the fall of 2013.

Sincerely,

Steven A. Millard  
President

(Hospital Administrator Survey initial e-mail notification)

Hospital Address

Dear Colleague (or individual name):

Your association has agreed to assist in the facilitation of a research study of factors associated with recruitment and retention of family medicine physicians in Idaho. Information from this study will be used to develop strategies to increase the number of family medicine physicians serving in Idaho. Funding for this study is provided by the Idaho Department of Health and Welfare – Office of Rural Health and Primary Care, through a federal grant from the U.S. Department of Health and Human Services, Health Resources and Services Administration. The Center for Health Policy of the College of Health Sciences at Boise State University and the Family Medicine Residency of Idaho are responsible for the conduct of this research. The Idaho Academy of Family Physicians, Inc. and the Idaho Hospital Association are partners in this research.

We are mailing a survey to you today. Please take a few minutes to answer the questions on the survey that accompanies this letter and then return it to Boise State University in the postage-paid envelope by October 16, 2012 in order to be included in the summary results. Participation in this survey is voluntary. Be advised that your answers will be anonymous and the data from the surveys will only be released in aggregate form. In addition, limited information on demographic factors which could specifically identify an institution will be obtained and every effort will be made to protect participants' confidentiality. If you are uncomfortable answering any of these questions, you may leave them blank.

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Sincerely,

Steven A. Millard  
President

(Hospital Administrator Survey second e-mail notification)

Hospital Address

Dear Colleague (or individual name):

This is a friendly nudge to remind you to please complete the survey we recently mailed to you regarding a research study of factors associated with recruitment and retention of family medicine physicians in Idaho. If you will recall, information from this study will be used to develop strategies to increase the number of Family Medicine physicians serving in Idaho.

Please take a few minutes to answer the questions on the survey and then return it to Boise State University in the postage-paid envelope by October 16, 2012 in order to be included in the summary results. Participation in this survey is voluntary. Please remember that your answers will be anonymous and the data from the surveys will only be released in aggregate form. In addition, limited information on demographic factors which could specifically identify an institution will be obtained and every effort will be made to protect participants' confidentiality. If you are uncomfortable answering any of these questions, you may leave them blank.

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Sincerely,

Steven A. Millard  
President

# Appendix C

## Rural Family Medicine Physician Survey

**Rural Family Medicine Physician Survey**

- 21. Age: \_\_\_\_\_
- 22. Gender: **Male** **Female** (circle one)
- 3. Years in practice post residency: \_\_\_\_\_
- 4. Years at this practice site: \_\_\_\_\_
- 5. Future years anticipated to be at this practice site: \_\_\_\_\_
- 6. Future years anticipated to be in practice at any site: \_\_\_\_\_
- 7. Proximity of practice site to residency training site in miles: \_\_\_\_\_
- 8. Any medical school/residency training in Idaho? **Yes** **No** (circle one)
- 9. Any service obligation or loan repayment at current site? **Yes** **No** (circle one)
- 10. Proximity of practice site to hometown or extended family in miles: \_\_\_\_\_
- 11. Do you provide the following services? (circle Yes or No for each question)

- Prenatal care ..... **Yes** **No**
- Vaginal delivery ..... **Yes** **No**
- C-section ..... **Yes** **No**
- Other OR services ..... **Yes** **No**
- EGD or colonoscopy ..... **Yes** **No**
- ER coverage ..... **Yes** **No**
- Inpatient admissions ..... **Yes** **No**
- Mental health ..... **Yes** **No**
- Nursing home ..... **Yes** **No**

12. Do you supervise midlevel care? **Yes** **No** (circle one)

13. Do you utilize: (circle Yes or No for each question)

- Internet databases, journals, e-publications..... **Yes** **No**
- Teleconferencing or other interactive technology.... **Yes** **No**
- Electronic health records for patient care..... **Yes** **No**
- Electronic physician education materials ..... **Yes** **No**

14. On average, how many hours per week do you provide direct patient care? \_\_\_\_\_

15. On average, how many hours per week are you on call for any service? \_\_\_\_\_

16. On average, how many clinic patients do you see per week? \_\_\_\_\_

17. What is your employment/business relationship?  
\_\_\_\_\_

18. How satisfied are you with your compensation for patient care? (check one)

**Very Satisfied** \_\_\_\_\_ **Satisfied** \_\_\_\_\_ **Unsatisfied** \_\_\_\_\_ **Very Unsatisfied** \_\_\_\_\_

19. How satisfied are you with your malpractice coverage arrangement? (check one)

**Very Satisfied** \_\_\_\_\_ **Satisfied** \_\_\_\_\_ **Unsatisfied** \_\_\_\_\_ **Very Unsatisfied** \_\_\_\_\_

20. How satisfied are you with your ability to arrange coverage for vacation or leave? (check one)

**Very Satisfied** \_\_\_\_\_ **Satisfied** \_\_\_\_\_ **Unsatisfied** \_\_\_\_\_ **Very Unsatisfied** \_\_\_\_\_

21. How satisfied are you with the ability of your hospital to recruit qualified family medicine physicians? (check one)

**Very Satisfied** \_\_\_\_\_ **Satisfied** \_\_\_\_\_ **Unsatisfied** \_\_\_\_\_ **Very Unsatisfied** \_\_\_\_\_

22. What is your primary source of continuing medical education?  
\_\_\_\_\_

23. Do you plan to maintain board certification in family medicine? **Yes** **No** (circle one)

24. Overall, how satisfied are you with your current practice? (check one)

**Very Satisfied** \_\_\_\_\_ **Satisfied** \_\_\_\_\_ **Unsatisfied** \_\_\_\_\_ **Very Unsatisfied** \_\_\_\_\_

25. Would you encourage medical students/residents to enter rural family medicine? **Yes** **No** (circle one)

*Thank you for taking the time to fill out this survey. The Idaho Academy of Family Physicians, Inc. will share the results with you after these data are analyzed and a report is completed. Please use the postage paid envelope to return this survey to Boise State University. The researchers thank the Idaho Academy of Family Physicians, Inc. and the Idaho Hospital Association for their assistance in this project and the Idaho Department of Health and Welfare, Office of Rural Health and Primary Care for funding this research.*

## Appendix D

Rural Family Medicine Physician Survey Cover Letter and E-Mail Notification Documents

(Cover letter for Rural Family Medicine Physician Survey)

IAFP Letterhead  
Date  
Physician Address

Dear Colleague (or individual name):

The Idaho Academy of Family Physicians (IAFP), along with several partners, is conducting a research survey around recruitment and retention issues in rural family medicine. The study will be used to develop strategies to illustrate the difficulties rural family physicians face. With your help, we can develop an Idaho-focused study with data specific to our state. Law makers and community leaders respond best to information collected from their constituents. The data will help educate community and government decision makers concerning the lack of resources and the need to assist family physicians in their efforts to care for citizens in rural Idaho. It will enable IAFP to better support family physicians. The survey results will also enable one of our partners, the Family Medicine Residency of Idaho, to better prepare family physicians to take on the challenges of rural medicine.

Please take a few minutes to answer the questions on the survey and return it to Boise State University in the postage-paid envelope. Participation in this survey is voluntary. We are requesting all surveys be returned by October 16, 2012. For this research project, we are requesting demographic information. Due to the make-up of Idaho's population, the combined answers to these questions may make an individual person identifiable. We will make every effort to protect participants' confidentiality. However, if you are uncomfortable answering any of these questions, you may leave them blank.

If you have any questions about the survey, please contact Ed Baker, Ph.D., Director, Center for Health Policy at Boise State University, at 208-426-3118 or David Schmitz, M.D., Associate Director for Rural Family Medicine at the Family Medicine Residency of Idaho, at 208-921-6360. If you have questions about your rights as a research participant, you may contact the Boise State University Institutional Review Board (IRB), which is concerned with the protection of volunteers in research projects. You may reach the board office between 8:00 AM and 5:00 PM, Monday through Friday, by calling (208) 426-5401 or by writing: Institutional Review Board, Office of Research Compliance, Boise State University, 1910 University Dr., Boise, ID 83725-1138.

Thank you for helping us learn more about recruitment and retention issues impacting family medicine physicians in the rural areas of Idaho. This research is important in expanding access to quality health care and improving the health outcomes for people in rural communities. The results will be available through the Idaho Academy of Family Physicians, Inc. office in the fall of 2013.

Sincerely,



Suzanne M. Allen, M.D., M.P.H.  
President, Idaho Academy of Family Physicians, Inc.

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(Rural Family Medicine Physician Survey initial e-mail notification)

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President, Idaho Academy of Family Physicians, Inc.

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(Rural Family Medicine Physician Survey second e-mail notification)

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