*Guest Column*

# RURAL HEALTH CLINICS: CONTRIBUTORS TO EFFICIENCY AND EFFECTIVENESS

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## INTRODUCTION TO OUR TEAM AND RESEARCH

Our team began its current research on Rural Health Clinics (RHCs) in August of 2008. To summarize, we are exploring organizational and contextual determinants regarding RHC efficiency and effectiveness. Dr. Thomas T. H. Wan, the study's Principal Investigator, referred to this grant-supported research as an "evidence-based approach to improving the effectiveness and efficiency of RHCs." Our team consists of a combination of University of Central Florida (UCF) research faculty and doctoral students from the Public Affairs Doctoral Program (PAF), an integral division of the College of Health and Public Affairs at UCF. We would like to first take this opportunity introduce our readers to the individuals responsible for our research design and execution, and literature: Thomas T. H. Wan (PI), Judith Ortiz (Co-PI), Chiung-Ya Tang, Abiy Agiro, Gerald-Mark Breen, Natthani Meemon, and Seung Chun Paek. We acknowledge the Health Resources and Services Administration, Office of Rural Health Policy, as the funding source of our current research project entitled "Rural Health Clinics: Measuring Efficiency and Effectiveness." We must also establish that the opinions and statements made in our literature reflect our views only and do not represent those of the funding agency.

The general goals of this study are twofold: 1) to determine the factors that influence the variation in RHC performance and 2) to ascertain the relationship of the performance indicators. Performance is represented by two aspects: efficiency and effectiveness. In terms of our progress thus far, we have successfully examined thousands of RHCs within the scope of a nationalized study; consequently, we are increasingly developing the capacity to make generalizations on the factors that lead to efficient and effective administration of RHCs. Our goal is to disseminate research findings that will assist RHC leaders to scientifically plan for the future and to attain higher degrees of efficiency and effectiveness in their rural practices. As such, our findings will contribute to an overall improvement in RHC operations.

## PURPOSE OF THIS COLUMN

Our purpose in writing this column is simple and straightforward – to share our recently compiled, preliminary survey results from data gathered during 2008 and 2009. We believe that this outlet – the Online Journal of Rural Nursing and Health Care (OJRNHC) – is an ideal venue for public sharing and reporting of the preliminary results of our study.

The purpose of our nationwide survey was to identify the possible contributors to RHC efficiency and effectiveness. We received survey responses from 402 RHCs. The regional distribution of the responding RHCs was comparable to that of all RHCs nationwide. The survey results reveal a current, representative perspective of RHC conditions, focusing on aspects such as structure, location, and operations. Our goal in this journalistic product is to furnish interested scholars and health practitioners with an evidence-based article on RHCs in the United States. Following our presentation of key RHC elements, we will present our plans for forthcoming projects, all of which we intend to develop out of our extensive research into our current data and the robust analyses we will subsequently make.

## PRELIMINARY RESULTS OF RHC SURVEY

Seven facets of RHC operations were explored in the survey. (Titles of aspects are listed alongside charts and figures.) In the following section, we present a series of both pie and bar charts to illustrate our preliminary survey findings and improve insight into our evidenced-based research on RHCs.

### *RHC Classification: Provider-Based or Independent-Based*

The first facet of RHCs we explored is Classification, that is, whether the RHCs are either provider-based or independent-based. Figure 1 displays these results.

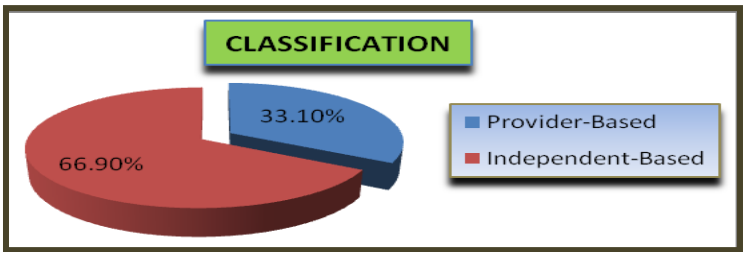


Figure 1: RHC Classification

### *RHC Regional Distribution*

The second facet is RHC Regional Distribution, that is, the percentage of RHCs located in each of the four U.S. Census Bureau regions: Midwest, South, West, and Northeast. Figure 2 displays these results.

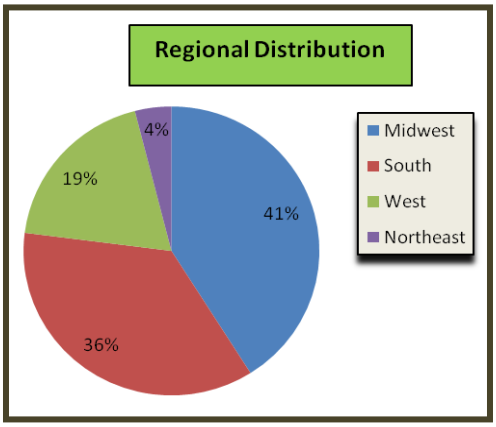


Figure 2: RHC Regional Distribution

***RHC Ownership***

The third facet is RHC Ownership; that is, the percentages of for-profit (individual, corporation, partnership), not-for-profit (individual, corporation, partnership), and government (local, state, and federal) owners. Figure 3 displays these results.

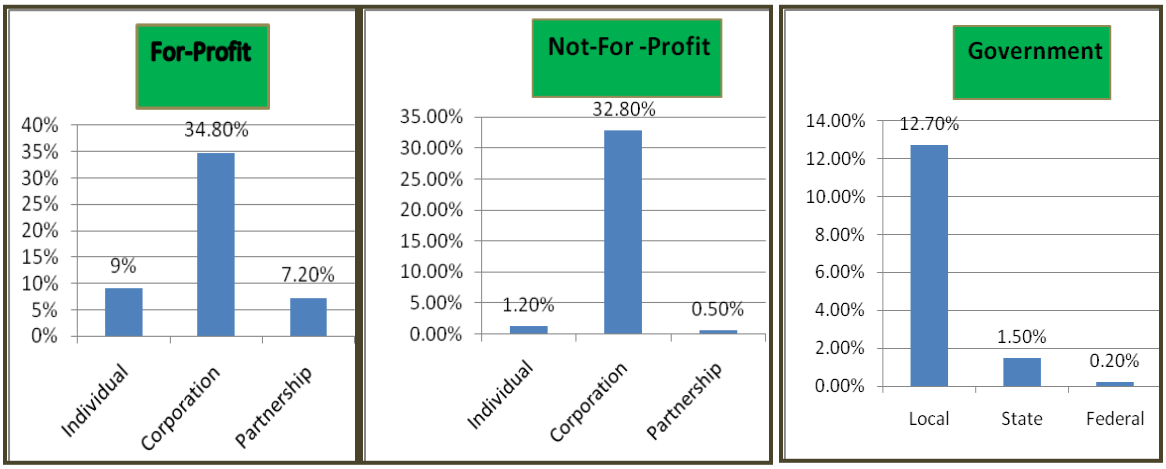


Figure 3: RHC Ownership

### *RHC Participation in an Integrated Health System*

The fourth facet is RHC Participation in an Integrated Health System, ranging from no participation at all to over 10 years of participation. Figure 4 displays these results.

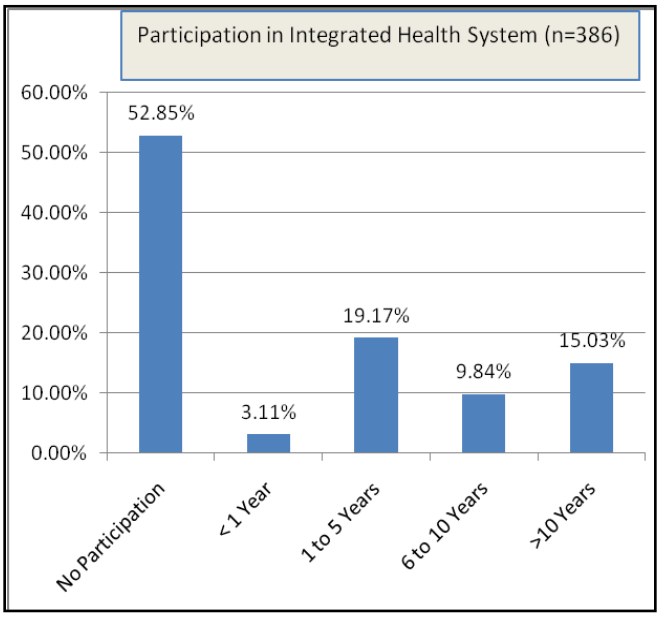


Figure 4: RHC Participation in Integrated Health System

### *RHC Financial Characteristics*

The fifth facet is RHC Financial Characteristics, that is, RHC revenue sources ranging from Medicare, fundraising, to patient visits. Figure 5 displays these results.

### *RHC Technology Use*

The sixth facet is RHC Technology Use, that is, the types of technologies RHCs use and the number of years RHCs have used electronic medical records (EMRs). Figure 6 displays these results.

### *RHC Clinical Management Programs and Practices*

The seventh facet is RHC Clinical Management Programs and Practices. Figure 7 displays the details of these results.

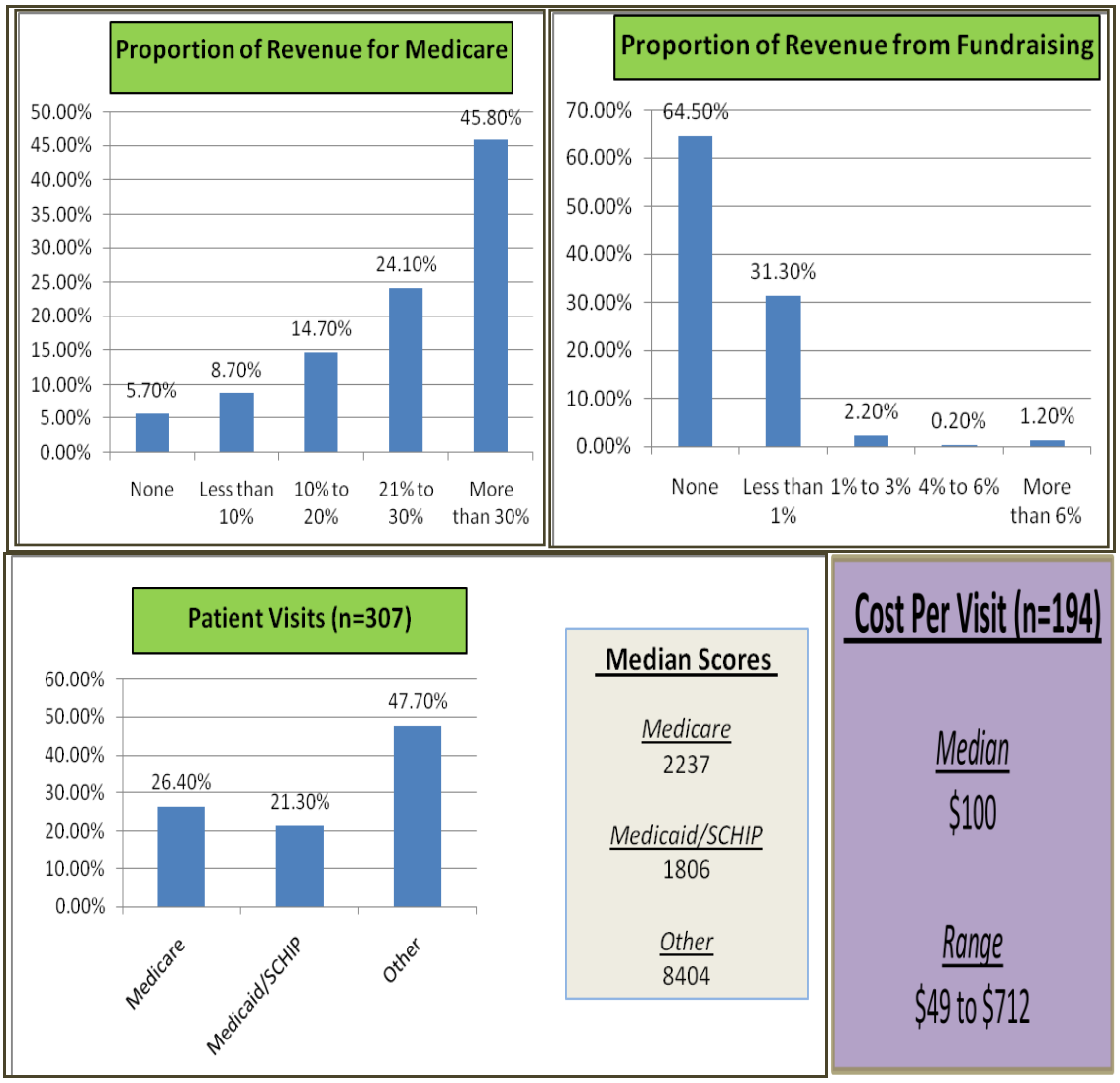


Figure 5: RHC Financial Characteristics

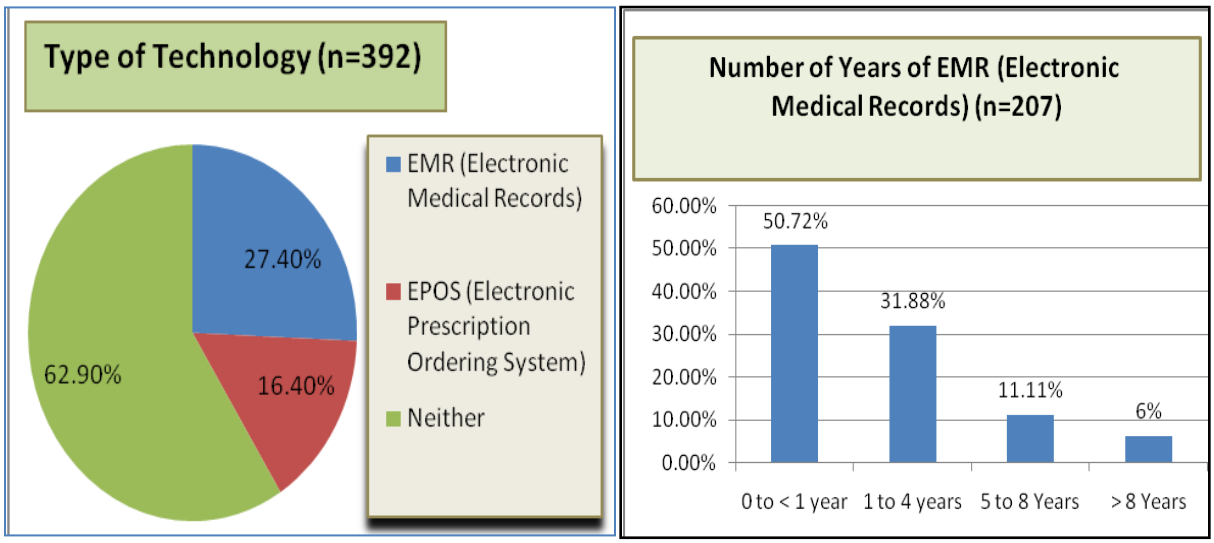


Figure 6: RHC Technology Use

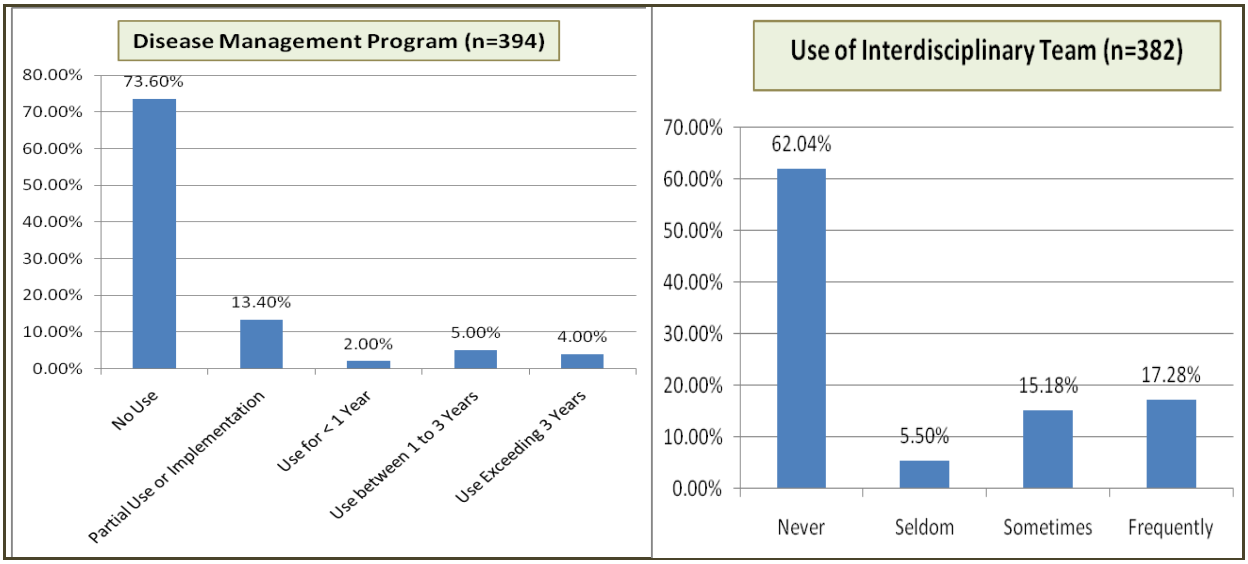


Figure 7: RHC Clinical Management Programs and Practices

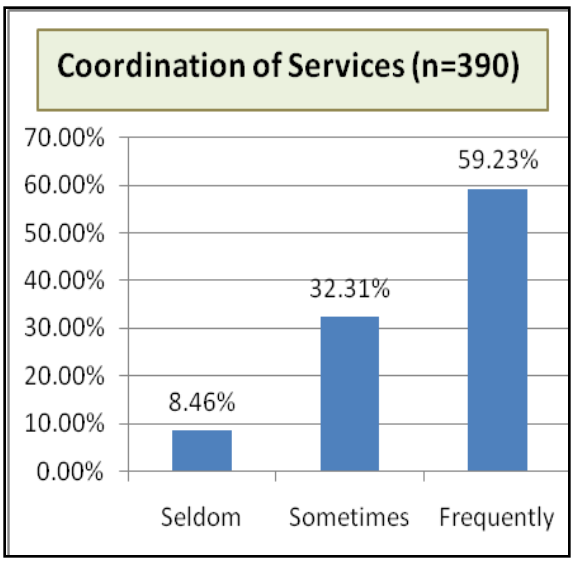


Figure 7: RHC Clinical Management Programs and Practices (continued)

*Nurse Practitioner (NP), Physician Assistant (PA), and Physician Staffing*
We specifically analyzed our survey data to determine how clinics are staffed according to three employee categories: (1) NPs, (2) PAs, and (3) physicians. The mean number of FTEs for each category is: NPs = 1.01, PAs = 1.09, and physicians = 1.80. The mean percentage for each category – per the total of the three categories – is as follows; NPs = 34%; PAs = 24%; and physicians = 42%. The median percentage for each category consists of the following: NPs = 27%; PAs = 4%; physicians = 46%.

## FUTURE DIRECTIONS AND NEXT TEAM AGENDA

Our subsequent research advances will, in part, draw upon our survey research findings and will move forward into the development of executive decision support systems for optimizing the efficiency and effectiveness of clinical practice in rural areas, as well as other important, currently unexplored areas of research regarding RHCs. For instance, we intend to investigate important topics such as: 1) the role and contribution of NPs in RHCs, 2) the identification of key or specific characteristics of efficient and inefficient RHCs, 3) the influence of community socioeconomic status on the efficiency and effectiveness of RHCs, 4) the trends in efficiency and effectiveness in RHCs, and 5) the impact of information technology (IT) adoption on RHC efficiency and effectiveness. These five research prospects are a few among a myriad of ideas we plan to vigorously pursue given the extensive data we have been able to collect. We will continue to use our survey responses toward answering many very important questions concerning RHCs.

Our research efforts will be actualized via various health-oriented/medical-based publications, professional presentations at conferences (e.g., National Association of Rural Health), and scholarly, academic journal articles. Upon completion of the statistical analyses, we will conduct a focus group of RHC administrators, medical directors, PAs, and NPs to discuss the interpretation of the analytical results. The opinions of RHC administrators and medical directors/personnel will be incorporated into the study results to help illuminate many more

insightful conclusions, conditions, and study foci that would otherwise be difficult to decipher or reveal via direct interpretation of our study analyses.

## ACKNOWLEDGEMENTS

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