REDCap and Rural Health:
An Opportunity to Enhance Collaborative Research and Rural Health Care Delivery

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ABSTRACT

This paper describes the opportunities for promoting collaborative research and improving rural health care delivery by the implementation of REDCap software. In the era of advanced technologies, rapid development and dissemination of electronic health data may be possible. Health data are accessed by collaborating researchers in various academic disciplines through the Internet. Community-based approaches to health care delivery through the mobile health clinics may be integrated into the development and utilization of databases through REDCap to improve rural health. Multifunctional features of REDCap provide useful tools in various stages of health care delivery planning that support both research and operational endeavors. The authors will discuss potential usage of REDCap using an existing mobile health clinic in South Central Kentucky as a primary source of data, and describe how health data may be used in conjunction with REDCap with the goal of improving the health of rural communities in South Central Kentucky.

Keywords: E-Health, Kentucky, Mobile Health Clinic, Patient Data, REDcap, Rural Health

INTRODUCTION

Poor access to health care providers and social services are a pervasive challenge in many rural communities in the United States. Barriers to health care providers may include long distance to health care providers, lack of transportation means, inability to pay for the services, and limited health insurance coverage (Fitzpatrick, Powe, Cooper, Ives, & Robbins, 2004; Penchansky & Thomas, 1981; Scheppers, van Dongen, Geertzen, & Dekker, 2006; Nemet & Bailey, 2000). As opposed to stationary hospitals and clinics, mobile health clinics are an alternative source of health care delivery in medically underserved urban and rural communities (Hill et
Several states in the U.S. and community-based agencies have implemented mobile health clinics to cope with barriers to health care access among hard-to-reach populations (Harris et al., 2011; Rodriguez et al., 2007). In addition, several states in the U.S. have implemented mobile health units to address barriers to health care access among hard-to-reach populations. These units travel to rural areas to provide health care services to underserved populations.

Although rural health care delivery has been an important public health issue for many decades, rural health research has been a challenge in part due to the lack of data and collaborative research. The advancement of rural health research generally lags behind that of urban health research (RHRC, 2009). Yet, research shows that it is important to recognize the needs and types of health care provision in each rural community because of the diverse populations, culture, and economic activities unique to each community (Hartley, 2004). Rural areas, where the prevalence of chronic diseases is high and health care accessibility is low, may benefit from community-based health care delivery and collaborative research which seeks to monitor and reduce health disparities.

The Institute for Rural Health Development and Research (IRHDR) is housed within the College of Health and Human Services (CHHS) at Western Kentucky University (WKU). The IRHDR is a university-based multidisciplinary organization that collaborates with several departments across WKU including Public Health, Dental Hygiene, Nursing, Biology, Social Work, and Women’s Studies. The primary mission of the IRHDR is to steward a high quality of life for rural populations and underserved areas by (1) engaging students and faculty in service learning and research; (2) providing clinical services; and (3) serving as a global resource for improving health in rural communities. Health services that are provided by the IRHDR range from health screenings for chronic diseases, health education in various areas to a full range of dental care services. These services are provided at no cost through the Mobile Health Unit (MHU) and Mobile Dental Unit (MDU) that travel to selected rural locations throughout South Central Kentucky. Their service area encompasses the City of Bowling Green, Kentucky and its surrounding rural communities. The mobile health units were purchased, in part with federal funding. However, the units are sustained through a budget provided by the CHHS. The IRHDR has been providing services since 2001.

To date, the number of patients who received services from the MHU and MDU between 2001 and 2011 exceeds 20,000 adults and children. Data collected during this period of time has, for the most part, been underutilized. In an effort to encourage collaboration and interest among the faculty within the CHHS, the IRHDR worked with the CHHS administration to make faculty aware of the potential for scholarly activities using this data that has been collected for years. One of the challenges that inhibited the faculty’s ability to collaborate was the different formats and statistical packages used by different departments within the CHHS. Additionally, the IRHDR was looking for a tool to better track and follow-up with the patients who received services. The desire to achieve these goals has led to the adoption of the REDCap program.

REDCap (Research Electronic Data Capture) is browser-based, metadata-driven electronic data capture software which allows researchers to manage and use tools for collecting, storing and disseminating research data (Harris et al., 2009). REDCap, however, can be programmed not only to perform various research projects, but also accomplish various administrative tasks. This paper will describe the potential applications and benefits of REDCap, and its ability to enhance rural health care delivery. In the following section, we briefly describe how the key REDCap functions enhance already existing research tools, and discuss applications of REDCap in-depth as it relates to the data collected by the IRHDR.
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