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# Utilizing Team-Based Care to Improve Rural Cardiovascular Care

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# **Utilizing Team-Based Care to Improve Rural Cardiovascular Care**

**Amanda Clouser, Kastin Engeling, & Kris Rhodes**

## **Executive Summary**

### **Introduction of the Problem**

According to the Centers for Disease Control and Prevention (CDC), over 28.4 million Americans, 11.7% of the U.S. population, have been diagnosed with heart disease (CDC, 2017a). Among various geographic populations, rural communities remain among most affected and underserved (Collins, 2016). Disparities exist between rural and urban populations, specifically pertaining to access to a full range of cardiovascular care. Rural residents face barriers to health care, including but not limited to, higher out of pocket costs, time, accessibility, service conveniences, lack of education, and insurance coverage (Rural Health Information Hub, 2017a). Using a team-based care approach in rural communities could improve the overall access and cardiovascular health services available for individuals living in rural areas, potentially improving health care outcomes. In the rural clinic selected for this project, efforts have begun to incorporate a team-based care approach to cardiovascular services. After implementation of these services, there was a need to evaluate the perceptions of patients and healthcare staff about the effectiveness of this model of care.

### **Literature Review**

Currently, there are approximately sixty million Americans who live in a rural area in the United States (Grady & Hinshaw, 2017). Mortality rates, major acute cardiac event rates, and the prevalence and incidence of CVD and associated CVD risk factors in the rural areas are persistently higher than in nonrural areas (Grady & Hinshaw, 2017). According to Knudson, Meit, & Popat (2014), in the nation's most rural counties, adults twenty years or older, showed the highest patterns of heart disease death rates for both men and women. The rate for men

whom died of heart disease in the rural area was eighteen percent higher than that of the suburban counties (Knudson et al., 2014). Educational level can also be an influential factor in these disparities. Individuals living in a rural setting tend to have significantly lower levels of education compared to those living in an urban setting (Hughes et al., 2015). In addition, the biggest issues for rural residents are lifestyle factors that are typically related to the overall lower levels of incomes in rural areas (Harrington & Heidenreich, 2015). Furthermore, individuals living in rural areas may not receive the same standard of care, especially in preventative medicine (Amponsah et al., 2015; Kim, et al., 2014). According to O'Sullivan, Joyce, and McGrail (2014) the use of specialty care in conjunction with traditional comprehensive primary care, is considered the ideal treatment method for managing chronic illness in the rural areas. In a 2014 survey study, only 645 of the 3505 specialists surveyed provided care to a rural population (O'Sullivan & McGrail, 2014). A team-based approach that includes collaboration with nurse practitioners as providers of rural cardiology services has the potential to address some of these disparities.

### **Project Methods**

The purpose of this project was to increase access to cardiovascular care in a rural Illinois community by evaluating the barriers patients and providers faced when accessing cardiovascular care. A quality improvement project was conducted to identify new barriers to cardiovascular care in rural health, as well as evaluate the efficacy of an existing contemporary care model which utilizes team-based approach, nurse practitioner and physician teams, in the provision of care. Based on findings from the assessments and evaluation, a strategic plan was developed for the clinic to use in future planning. According to the 2010 census, the county in which the clinic that the project is being implemented in has a population of 32,612. The county

is a federally designated Health Professional Shortage Area (HPSA), which ranks this county sixteen on a twenty-six-point scale (U.S. Department of Health & Human Services, 2017). The county is also designated as a medically underserved area (MUA) and a medically underserved population (MUP). On a hundred-point scale, the county scored a sixty-one for both MUA and MUP (U.S. Department of Health and Human Services, 2017).

A set of open-ended questions was developed to guide the focus group interview. The questions were designed to identify persistent barriers in rural cardiovascular care, effectiveness and satisfaction of the patients regarding the team-based approach to care, and if the use of a team-based approach has increased patient access to receiving care. A full analysis of the data collected through the focus group interviews will be performed by a statistician from Duke University who is an expert in qualitative data transcription. All data was collected anonymously. Once the data has been transcribed and analyzed, the findings will be used to develop a protocol of recommendations that could help continue to improve access to cardiovascular rural health in this area. Since the data transcription will be taking much longer than the stakeholder and project team anticipated, a summarized version of thematic qualitative findings will be discussed in the evaluation section, based on our initial analysis of the data. To avoid bias, the stakeholder preferred that a neutral party from the community be in charge of recruiting clinic patients who use cardiovascular services in this rural community to participate in the focus group interview. Initially, focus group interviews with patients and a separate focus group with healthcare providers were planned. However, due to time limitations and unsuccessful patient recruitment efforts, only a healthcare provider focus group interview was conducted. The stakeholder for this project, the SIUE IRB, and the IRB of the clinic in which the focus group interview was conducted provided approval for this project prior to implementation.

## **Evaluation**

A focus group interview consisting of nine healthcare providers was conducted in the rural health cardiology clinic selected for this project. The group was comprised of the CEO of the hospital, hospital administration, physicians, nursing staff, and a retired physician. The staff identified lack of staffing as a barrier, stating that at some points they have no coverage for certain procedures or tests which ultimately affects the patient's outcome. When there is inadequate staffing the patient may have the burden of traveling farther for procedures/tests. Some of the group participants also identified a need for more equipment for cardiology testing as well as more advanced technology to keep up with surrounding facilities (ie; a cardiac catheterization lab). The group identified that although there has been an increase in the number of cardiology patients who are able to access and receive care, they would like greater availability of a cardiologist in the community. Another emerging theme was the need for standardized cardiology protocols. Participants used as an example a chest pain protocol that has been implemented at the clinic's partnered regional hospital. The participants collectively expressed that implementing a chest pain protocol at the clinic was a priority and that they felt they had great support from the clinic administrators. Next, the provider participants identified the need for more equipment and/or better equipment for their cardiology testing and procedures. The participants expressed that having a full-time cardiology provider would be beneficial to their community. Lastly, there was brief discussion about the feasibility of bringing a cardiac catheterization lab to their organization. The focus group participants all agreed that having the nurse practitioner there was beneficial to their organization and the people it serves. A vast majority of the focus group participants was pleased with the team-based approach of a nurse practitioner and a physician to provide cardiovascular care at the rural clinic. They stated that the team approach allows for an increase in the number of patients who could be seen. The

participants suggested that the clinic recruit a full-time cardiovascular nurse practitioner for their organization. Due to financial constraint this is not feasible at this time.

There were several limitations noted in the implementation of this project. The patient population was not represented due unsuccessful patient recruitment efforts. The focus group participants were providers, administration, and hospital staff. The focus group participants did not always remember to use their assigned number prior to speaking, jeopardizing their anonymity. However, no names or personal information were recorded. In the original plans for focus group interviews, we had enlisted an unbiased third party to read the questions. Unfortunately, she was not able to attend on the day the interviews were scheduled. The project stakeholder decided it was best for her to take the responsibility of reading the questions which may have threatened the bias to the focus group. By having the stakeholder asking questions, it was easier for the group participants to go off topic and not address the question at hand. Despite the limitations, we were able to gather data that will help implement a plan to improve cardiovascular care in the rural community.

Due to the limitations that were mentioned above, we were not able to explore the patient's perceptions of the barriers still exist in receiving cardiovascular care in the rural setting with the team based approach of care including nurse practitioners. However, we were fortunate enough to gain insight from the care providers regarding their perceptions of the barriers that currently exist related to overall cardiovascular care in the rural clinic. The three biggest themes that came out of the focus group that posed as barriers to cardiovascular care in the rural setting were: the need to implement a chest pain protocol, inadequate staffing, and lack of necessary equipment (ie. ultrasound machines, stress test treadmills, etc). In order to respond to the expressed needs and concerns of this organization, we used research evidence in the literature to

develop a strategic plan that may be helpful in gradually addressing the identified barriers. The project team shared the plan with the stakeholders for potential future use in their practice setting.

### **Impact on Practice**

The major themes identified in the focus groups regarding barriers to cardiovascular care included increased staffing, the need for more equipment for testing and procedures to improve patient outcome and reduce patient travel, a full-time provider, and a cardiac catheterization lab. These barriers will need to be addressed at some point. Given the time line constraint the only realistic impact on practice that this project could have was to use the findings from the focus group interview to develop an evidenced based strategic plan for the clinic based on the participants' perceived needs. The strategic plan was provided to the stakeholder for future planning. This is consistent with the primary request from the stakeholder when this project was initiated. Long-term, focus group interviews with patients would be essential to evaluate their perceptions of the cardiovascular services that they have been receiving through this team-based approach.

### **Conclusions**

The focus group participants expressed that there is indeed room for improvement in this organization's cardiovascular care delivery model. Overall patient outcomes may be improved by educating the staff about the chest pain protocol since they recognized this as one of their priority needs. Employing a standardized protocol has the potential to eliminate room for error and give clear, concise directions for the hospital staff to follow. The result of this project revealed a unanimous agreement that there would be a positive impact on patient outcomes by implementing an already existing chest pain protocol provided by the cardiovascular provider

group in their facility. There was also a unanimous consensus that the organization was pleased to have the providers continue to offer services using a team-based approach and that it has helped improve access to cardiovascular care in the rural setting. Using a team-based approach including provision of care by a nurse practitioner in addition to the physician, has the potential to continue to maximize their time and see more cardiovascular patients in the rural setting. Future projects focusing on evaluating the perceptions that patients receiving cardiovascular care have about this model are essential.

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