Interorganizational Collaboration in Healthcare:
Insights from Cardiovascular Systems of Care

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Abstract

Interorganizational theories of management contend that collaboration and interdependencies between organizations can lead to distinct competitive advantages. Yet, this theory is largely rooted in the consumer goods industry (not healthcare) and has been examined primarily from the advantages provided to individual firms (not the community as a whole). In this research, we will explore the nature of collaboration between organizations in healthcare, and specifically examine evidence from the field of cardiovascular care on community outcomes emerging from a large-scale interorganizational collaboration. We present data on resulting from a six-year collaboration around the Dallas metropolitan area, which has yielded significant improvements in key outcomes for the community. We will generalize these findings to provide recommendations for interorganizational collaborations elsewhere in the healthcare industry.

Background

Organizations collaborate in a variety of structural ways, including strategic alliances, joint ventures, and other less formal partnerships. Management theories about interorganizational collaboration tend to focus on the resulting competitive advantages which these relationships will produce, primarily for
each of the participating partners (Larsson et al, 1998). Much of the time, this research focuses on a dyad relationship between two firms, as in a joint venture between two hospitals. Very little research has been conducted around multi-institutional collaborations, which might have dozens of partners focused on specific and specialized programs.

Cardiovascular care provides an example of how these large multi-organizational collaborations might evolve. Sometimes referred to as “systems of care”, they are defined as organized, regional, inter-facility networks of providers that develop and implement common protocols, guidelines, and performance expectations to improve patient care (Ting et al, 2007). More extensive collaboration and tighter integration between the various providers involved in responding and treating acute myocardial infarction is one strategy for reducing the systemic delays. Increased delays result in higher likelihood of death, primarily due to longer total ischemic time caused by administrative or clinical delays. Improving the coordination of care within the continuum is difficult because it requires efforts by multiple facilities such as emergency medical services (EMS), hospital emergency departments/receiving centers, and cardiology catheterization labs.

The impact of these collaborations are understudied for a variety of reasons. In this research, we intend to build upon the research in interorganizational collaboration by focusing on the relationship between interorganizational collaboration and community health outcomes in the case of Dallas County (Langabeer et al, 2017). We chose to focus on cardiovascular systems of care because of the disease significance, the breadth of the relationships between community providers, and the complexity of these collaborative networks.

**Methods**

Dallas County, Texas is the ninth largest county in the United States, and has an estimated population of 2.4 million. Over 95% of the county’s population is within a 15-mile radius of the city center, and interventional hospitals are distributed throughout the county, although with a higher concentration in the north of the city. Despite the high number of emergency receiving hospitals per capita in Dallas County,
there was not a well-coordinated system of care. In 2010, the South Central Affiliate of the American Heart Association received a total of $8.5 million grant over multiple years from multiple gifts from the W.W. Caruth, Jr. Foundation of the Communities Foundation of Texas. The program was designed to improve the system of care for acute myocardial infarction (heart attack) patients, specifically targeting improvements in ST-elevated myocardial infarction (STEMI). Specific emphasis at the beginning was emphasis on independent data validation and analyses of key outcome metrics, creating shared protocols and early alert mechanisms, reduction in transfer patients, full integration of 12-lead ECGs in pre-hospital runs, and a community-wide quality improvement process. The interorganizational collaboration was designed around 33 advanced receiving hospitals and 25 emergency medical services agencies.

We collected patient level data from all 58 partners on a quarterly basis over multiple years, and specifically examined key health outcomes for both the organization and the community over time. These outcomes include door to balloon (D2B), total ischemic time, and mortality rates. We used SPSS to identify statistical significance through a variety of tests of differences.

**Results**

There was a statistically significant reduction in the total ischemic time between the pre- and post-test periods, from 176 to 157 minutes (k samples=6.995, p<.01). The distribution between the groups was also significantly different (Kolmogorov-Smirnov=1.662, p<.01). This 19-minute median reduction represents a 10.8% improvement. We observed a slight change in mortality, which was not statistically significant.

During this research, we identified during the initiative a framework to help other interorganizational partnerships develop. We will present an evolutionary framework which we have identified from our research, and we will explore the specific organizational and structural factors necessary for successful interorganizational collaborations. We term this the STRIPE framework, representing: Strategy, Technology, Resources, Information, Protocols, and Evaluation. Each of these are essential to
long-term interorganizational collaborations (see figure 1). These will be described in more detail in the presentation.

Figure 1: Proposed Framework for Interorganizational Collaboration

![Proposed Framework for Interorganizational Collaboration](image)

**Conclusions**

Our research suggests that collaboration between healthcare organizations can produce positive changes in specific population health outcomes. We generalize our findings from cardiovascular care to propose a framework for interorganizational collaboration across the healthcare industry.

**References**

