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## A Conceptual Framework for the Study of Hospital Interaction and Investment in Public Health Systems

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# A Conceptual Framework for the Study of Hospital Interaction and Investment in Public Health Systems

## Abstract

**Background:** Health care reform has resulted in changes throughout the health system, including the Affordable Care Act (ACA) and IRS requirements that nonprofit hospitals conduct community health needs assessments and develop implementation plans to guide greater investment in their respective communities. This has led to questions of which factors influence hospital interaction and investment in PH systems.

**Purpose:** This paper presents a comprehensive framework, informed by a literature review and expert panel that introduces hypothesized factors related to these outcomes.

**Methods:** To develop a conceptual framework that identifies hypothesized indicators of increased hospital interaction and investment in PH systems, we completed a thorough and iterative review and coding of the literature. We drafted a first version of the conceptual model and convened an expert panel ( $n=9$ ) to review, further narrow, and refine the conceptual model of indicators.

**Results:** The finalized conceptual framework includes four primary categories: Community Demographics, Legal/Policy Environment, Market Conditions, and the Public Health and Hospital Organization and Systems. Detailed subcategories are included within each category. While we generally hypothesize that these factors determine the extent to which a hospital will interact and invest in PH systems, we indicate only their relational characteristics, not the direction in which these factors are specified.

**Implications:** Ongoing work will test components of the framework utilizing four published datasets. This paper presents the framework to guide future research and funding priorities in the field.

## Keywords

community investment, hospital partnerships, public health partnerships

## Cover Page Footnote

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## INTRODUCTION

Healthcare reform has resulted in health system changes, including the Affordable Care Act (ACA) and IRS requirements that nonprofit hospitals conduct community health needs assessments and develop plans to guide community activities. These efforts have increased interest in developing partnerships between hospitals and local public health systems (PH), defined as the broader membership of cross-sector partnerships between public, private, and nonprofit organizations.<sup>1</sup> There are multiple definitions in the literature of the way these partnerships develop and their purpose—to leverage resources, share knowledge, coordinate services—although most are not based on quantitative evidence. There is a lack of understanding about where and how these relationships already exist. There is little data available to explore these interactions, and most available data is from the PH agency perspective. In this paper these types of partnerships are referred to as hospitals' interaction with PH systems.

Similarly, there is interest in how hospitals are investing in their community, with assumptions that with ACA requirements, nonprofit hospitals are more likely to invest community benefit resources in PH systems. IRS-defined, hospital community benefits include three types of activities: Medicaid payment shortfall, charity care services, and population health activities.<sup>2-4</sup> Charity care includes free or reduced price medical care. Population health activities are broadly defined as “activities or programs, subsidized by the health care organization, carried out or supported for the express purpose of improving community health. Such services do not generate inpatient or outpatient bills, although there may be a nominal patient fee or sliding scale fee for these services.”<sup>5</sup> This third category includes activities that align with traditional PH activities. In this paper we refer to this use of resources by hospitals as investments in PH systems.

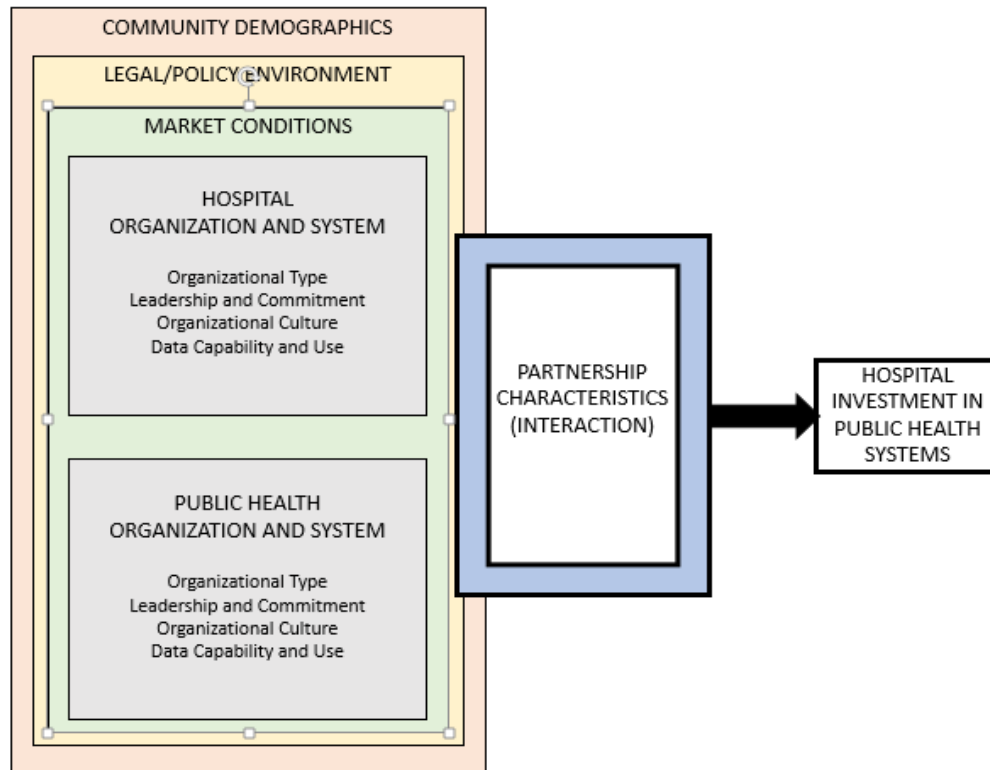
Most of what is known about these investment activities is limited in scope and there are no studies to date that have quantitatively identified factors that result in hospital investment in PH systems. Given this lack of research, we cannot fully explain why one hospital might have more interaction and investment in a PH systems, and another hospital not. Further, given the number of unknown factors (e.g. hospital leadership, PH configurations) that vary and affect this outcome, the need for more work in this area is timely. To guide future research, this paper uses an empirical approach to develop a guiding conceptual framework, answering the following research question: *What indicators specify higher hospital interaction and investment in the PH system?* The framework is meant to inform research and encompass all factors that may influence hospital investment and interaction in PH systems, although we may currently lack the data to measure certain factors.

## METHODS

To develop a conceptual framework that identifies hypothesized indicators of increased hospital interaction and investment in PH systems, a thorough and iterative review and coding of the literature were conducted. A first version of the conceptual model was drafted and an expert panel was convened to review, further narrow, and refine the model components. The expert panel consisted of 9 people representing hospitals ( $n=4$ ), public health ( $n=2$ ), and other national expertise ( $n=3$ ). Some panelists provided multiple perspectives (i.e., researcher employed by a hospital system). In an iterative process, we categorized components of the framework, nested subcategories in larger frames and created a visual representation.

## RESULTS

Figure 1 displays a simplified version of the framework. Factors that are identified as important to hospital investment and interaction in PH systems are highlighted at a broad level and include four primary dimensions (described below).



**Figure 1.** Conceptual Framework of Hospital Investment and Interactions in PH Systems

### Community Demographics

These measures are in 3 categories: (1) individual, immutable characteristics such as age, race and ethnicity; (2) individual conditions such as education, income, language, insurance status and socioeconomic status; and (3) community characteristics such as jurisdiction size, population size and density, number of providers, and number of academic institutions. Community demographics underlie the community structures and resources and influence the policy environments, market conditions, hospital and PH systems, and ultimately the investments and interactions of hospitals and PH. For example, it is unclear whether interactions occur more or less frequently in vulnerable, disenfranchised communities and how different communities may benefit from these types of interactions and investments.

### Legal / Policy Environment

*Legal/policy* is defined broadly to include laws as well as rules, regulations and reporting requirements regardless of enforcement. In general, this includes only *external* policies that are applied to hospitals and PH systems, rather than *internal* policies that drive an organization. The hospital and PH policy environments are different, yet sometimes overlapping. It is possible to

identify specific types of laws and policies that drive interaction and investment yet difficult to compile all the possible policies that may have impact. One example in the hospital realm is state-level community benefit laws and reporting requirements<sup>4</sup>. One example in the PH system is a requirement to complete community health assessments and plans at the local health department level.<sup>2,3</sup> The policy environment includes historical policies and enforcement such as the history of legal challenges to hospital community benefit use.<sup>4</sup> Other state health policy aspects include Medicaid expansion, use of 1115 waivers, State's role in data sharing, and Medicaid agencies' interests in initiatives such as Accountable Health Communities.

### **Market Conditions**

Market conditions initially arose as a hospital-specific component but we recognized the existing and growing impact of market conditions, broadly, on PH systems. Hospital-specific market conditions include overall market share, financing of patient care, HMO penetration and hospital competition. More general market conditions that also impact PH systems are overall health/health care market growth and the insurance market. One example is the difference in interactions and investments in highly competitive markets versus less competitive markets.

### **Public Health / Hospital Organization and Systems**

The components in these dimensions are focused on the *internal* systems and workings of hospitals and PH. This can refer to one individual hospital and PH department, or to a larger healthcare/hospital system and the various partners within a PH system. Specific subcategories in this dimension include organizational type, leadership commitment (or other leader characteristics), organizational culture, and data capability and use. Each of the subcategories pertain to both hospitals and PH systems, albeit with different potential effects.

While the general hypothesis that these factors determine the extent to which a hospital will interact and invest in PH systems, only their relational characteristics are indicated, not the direction in which these factors are specified.

**Table 1 provides more detail of each dimension. The final column identifies where that particular item was identified in this research. Because of its complexity and length, Table 1 has been published as an Additional File.**

## **IMPLICATIONS**

Throughout our methodology, it became evident that while these factors are a comprehensive framework, the data to empirically test the framework are not all available. The development of this framework is intended to generate discussion and hypotheses for research. *Further research is needed to condense this list and determine which factors are most important, available, and measurable.* In future papers, the research team will identify the gaps in data to test this framework, with the intention of guiding research and funding decisions to build more comprehensive datasets. In ongoing work, this team will test select framework components using data points from four existing datasets (American Hospital Association, IRS 990, NACCHO Profile, and PARTNER interaction data) to assess the relationship between these components and outcomes of hospital investment and interaction with the PH system.

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