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THE ROLE OF HOSPITALS IN POPULATION HEALTH:

Findings from National Conversations, Statewide Survey and Local Perspectives

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Table of Contents

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Executive Summary

There has been a growing interest among hospitals and health systems to engage in population health efforts. In part, this interest was sparked by a statutory requirement for nonprofit hospitals to conduct Community Health Needs Assessments (CHNAs) under the Affordable Care Act (ACA). These assessments create an opportunity for hospitals to engage with stakeholders across sectors, understand the needs of their communities and implement strategies that focus on meeting these needs. Additionally, the United States health care system has begun the process of moving toward a value-based payment model. This evolution toward value-based and other alternative reimbursement models could further encourage hospitals to engage more strategically in population health efforts. According to the American Hospital Association (AHA): "An aging population, increasing rates of chronic disease and the onset of value-based payment structures are among the many drivers that have moved hospitals and health systems in recent years to take a more prominent role in disease prevention, health promotion, and other public health initiatives."[1]

In order to improve the health of Kansans, it is essential to continue supporting hospital efforts to address population health. Hospitals and health systems are cornerstones of their communities. Not only do they provide care 24 hours a day, 365 days per year, but they also are strong economic engines. Based on the January 2018 Kansas Hospital Association economic report, *The Importance of the Health Care Sector to the Kansas Economy*,[2] hospitals employ more than 86,000 Kansans across the state. They also are significant purchasers of goods and services, resulting in the creation of an additional 75,000 jobs statewide. Hospitals and health systems keep communities strong, healthy and vibrant. They also are expanding their focus outside the walls of their institutions to improve population health.

The purpose of this technical report is to outline definitions of population health, potential benefits and challenges for hospitals addressing population health, and approaches used by hospitals to operationalize population health activities. The information presented in this report could be of interest to hospitals and other stakeholders that aim to assist or partner with hospitals around population health work.

Specifically, this report seeks to address the following questions:

- What is the definition of population health used by public health and health care sectors?
- What terms have been used interchangeably with "population health?"

- What are the benefits to a hospital or health system when it addresses population health?
- What legal and administrative structures, policies, regulations or rules exist to support engagement in population health?
- What barriers or challenges are there for hospitals and health systems to engage in population health?
- What are some examples, approaches or practices — beyond CHNAs and CHIPs — used by hospitals and health systems across the country to address population health?
- How can public health institutes assist hospitals and health systems to engage in population health work?

To answer these questions, the Kansas Health Institute (KHI) project team employed a multi-pronged approach:

- Reviewed relevant literature. The goal of the review was to summarize the current literature regarding population health concepts, and the role of and activities in population health by hospitals and health systems. The literature review included articles published in the last 10 years in peer-reviewed journals and grey literature (e.g., white papers, reports, guidance documents, issue briefs, research reports and theses).
- Conducted 14 key-informant interviews across the country during March and April 2018. The interviewees included 11 public health institutes, and representatives of two health systems and a university.

In addition to the national portion of the environmental scan, KHI collaborated with the Kansas Hospital Association (KHA) to implement two Kansas-specific activities to understand efforts by local hospitals in the area of population health:

- Led population health discussions and conducted interactive polls at six district meetings with Kansas hospitals across the state in 2018.
- Administered an online survey in May 2018 of Kansas hospitals to learn about their population health related activities.

The information gathered during the national environmental scan and the Kansas-specific activities was used to develop key findings and recommendations for organizations interested in helping hospitals engage in population health efforts.

Findings

Findings from the research are summarized below. Each section also includes a set of recommendations developed by the KHI project team for hospitals and the organizations interested in assisting hospitals as they engage in population health work. With the majority of interviewees being public health institutes (PHIs), findings from the interviews are likely to reflect primarily perspectives of PHIs. However, when representatives of a health system or university provided different views than PHI respondents, their responses are noted separately.

Definition of Population Health

Based on Literature Review and All Interviews

In general, "population health" is a widely used term across both the public health and health care sectors. Despite widespread adoption of the term, there is no consensus on a definition, and differing terminologies across sectors have added further confusion. The concept of population health seems to depend on the perspective of the organizations using it. From the public health perspective and according to the work of David Kindig and Greg Stoddard, population health usually refers to non-clinical approaches (e.g., transportation, housing, access to food, other approaches) for improving the health of a group of individuals, including the distribution of such outcomes within the group. These groups can be geographically defined (e.g., zip code, city) or might share characteristics such as age or income status. From the health care perspective, however, population health often is defined through a clinical lens as population health management, which typically focuses on effective coordination of care. Based on the literature review and interviews, it is important to note no matter the definition used, the most essential element of the population health perspective is an emphasis on addressing determinants of health or social and environmental factors (e.g., housing, food insecurity, education) and health disparities.

Recommendations:

- Hospitals and organizations interested in supporting hospitals in population health work could consider:
    - Convening stakeholders around the state to develop and build consensus around a common definition of “population health” for Kansas.
    - Adopting a working definition of “population health” to allow for clear and consistent communication with both internal and external audiences. Ensure that this definition

considers the spectrum along which this term previously has been defined by health care and public health.

- Developing a communication strategy — that may include a standard set of slides — around the definition of population health.

Benefits of Addressing Population Health

Based on Literature Review and All Interviews

Across literature and stakeholder interviews, some existing and emerging benefits to hospitals from population health activities were identified. Existing benefits include the opportunity for cost savings in some areas, for building trust and relationships with the community and other hospitals, for using population health data to better understand patient needs, and for developing strategies to better serve patients. Readmission penalties and the "bottom line" were cited as key drivers for engaging in population health. Furthermore, hospitals value their population health work because many — often including those in hospital leadership — consider population health to be a key part of their work as a mission-driven organization. Benefits also might include potential financial incentives provided by emerging models of reimbursement and care, such as the Accountable Health Communities model supported by the Centers for Medicare and Medicaid Services (CMS). Health care innovation and reform are expected to provide increasing financial and evidentiary support for population health efforts into the future.

Recommendations:

Hospitals and organizations interested in supporting hospitals in population health work could consider:

- Supporting and encouraging collaboration around population health activities among hospitals/health systems, public health agencies and communities.
- Building understanding and knowledge of value-based and other alternatives to fee-for-service health care payment models.
- Developing a communication strategy — that may include a standard set of slides — to increase awareness of the variety of innovative payment models for population health activities.
- Identifying strategies for capturing and evaluating benefits related to implementing population health efforts.

Barriers to Addressing Population Health

Based on Literature Review and All Interviews

There are several challenges related to hospitals engaging in population health. Historically, hospitals have focused on treating individual patients rather than maintaining wellness in the community. Population health requires shifting some focus toward addressing broader health outcomes at the population level. Community-focused population health represents a new area of work for hospitals that may or may not have the staff expertise to support the work. Some hospitals with a history of innovation or cross-sector collaboration may be better prepared to take on population health work than hospitals without this experience. Another barrier to advancing population health work is the existing fee-for-service reimbursement system, which essentially rewards medical providers for the volume of services provided. Addressing population health needs requires innovative payment and financing models. While the move toward value-based reimbursement continues to be pursued at the national level (e.g., the Accountable Health Communities model supported by CMS) and by some states (e.g., California, Maryland, Michigan), the transition has been slow. In the meantime, some hospitals might struggle to invest in population health as they find themselves in "deep financial trouble." The interviewees highlighted this issue, noting "many rural or community hospitals don't have enough margin to invest in the kinds of resources needed to do real population health work." Further, the determinants of health that population health seeks to address are hard to change in a short period of time, and health systems currently struggle to capture a return on investment for population health activities. According to some interviewees, hospitals don't always see addressing root causes of health inequities as within their control or influence.

Recommendations:

Hospitals and organizations interested in supporting hospitals in population health work could consider:

- Developing a communication strategy — that may include a standard set of slides — that provides an overview of potential barriers for engaging in population health and solutions (e.g., highlight payment models utilized by states).
- Establishing a process to continuously identify, capture and share examples of innovative funding models for financing population health activities.

- Creating opportunities for leaders — with experience taking on complex issues such as the social determinants of health — to share population health lessons with those seeking to effect change.

Existing Support Systems

Based on Literature Review and All Interviews

Support for hospital participation in population health can come from several different areas. Reform in health care, broadly speaking, has provided incentive for health system engagement with population health. Other reforms include changes to IRS Form 990 reporting for nonprofit hospitals to include a Schedule H with articulated community benefit from the hospital.[3] Financial drivers are and will continue to be important structures to encourage population health work by the health care sector. A current mechanism for incentivizing population health investment is penalizing adverse outcomes such as avoidable hospital readmissions. In addition to financial penalties, alternative financial arrangements include those established through accountable care organizations (ACOs), advanced primary care medical home models and bundled payment for episodes of care.[4] Other innovations include demonstration projects to serve individuals dually eligible for Medicare and Medicaid services.[5] Characteristics of individual health systems, as well as the markets in which they reside, also can be key factors for their population health efforts. Hospitals with a large market share might experience a greater sense of ownership of population-level health outcomes and experience a higher degree of community expectation to take responsibility for those outcomes.[6] Health systems in states without innovation grants or contracts from federal and state payers might not currently have the funds available to support population health activities.[7]

Several interviewees also pointed out the role of state level guidance and policies in advancing hospital work in population health. For example, Ohio issued guidance instructing hospitals to work in collaboration with local health departments and submit to the state one joint community health assessment. The state law also established the same community health assessment cycle for local health districts and tax-exempt hospitals (three years versus five years) to conduct CHNAs.

Although the interviewees recognized the impact of all these policies and programs on hospital engagement in population health, internal drivers were seen by several interviewees as stronger motivators for advancing population health efforts. These internal drivers included hospital

leadership, staff positions dedicated to population health, “the bottom line” or a financial loss influenced by determinants of health, or changes in organizational processes such as the creation of a single office to coordinate population health or a consistent approach toward population health across payers.

Recommendations:

Hospitals and organizations interested in supporting hospitals in population health work could consider:

- Providing concrete, evidence-based interventions that fit into the current payment-driven framework of the health care sector in its demonstration of cost-effectiveness and quality.
- Continuing dialogue with health care leadership about the role of population health in their sector.

Approaches to Addressing Population Health

In general, hospitals are at different points in the continuum of population health, with many hospitals primarily focusing on population health management. Population health management strategies focus on care coordination and health information technology (IT) solutions. Population health strategies typically include efforts that aim to address inequities in determinants of health (e.g., housing, education) by changing policies and systems. In order to achieve a measurable improvement in population health, hospitals can build on their population health management efforts and embark on non-clinical approaches (e.g., transportation, housing, access to food) for improving the health of populations that can be geographically defined (zip code, city) or share characteristics such as age or income.

When it comes to hospital engagement in population health, the literature suggests that it not only matters what activities are done, but how activities are done. Influential population health work may have four characteristics: research, an understanding of the decision-making environment, effective stakeholder engagement and strategic communication.[8] The literature also describes the necessity of cooperation between clinical delivery systems and community and public health agencies to improve population health.[9] In addition to mature partnerships with the community, other goals for population health referenced in the literature include the provision of coordinated preventive health services, culturally and linguistically appropriate care, the promotion of healthy behaviors, and tracking of population health metrics.[10] Further, value-

based reimbursement and health care workforce competency in population health are important tactics for successful population health work.[11]

Hospitals have been described as being in a unique position to lead or "anchor" population health work due to their established presence in the community, knowledge and resources.[12, 13] Other roles described in the literature for hospitals doing population health work include that of "specialist, promoter or convener."[14] The interviewees echoed findings from the literature and noted that many hospitals or health systems have been investing their time and resources in building stronger relationships with community partners and stakeholders. In terms of population health activities, the interviewees suggested that housing and food insecurity issues often were key priority areas for hospitals. According to one of the interviewees, "… they see investment in this area as a way to improve health outcomes and also an ROI in reducing the number of people in their ED." The interviewees also highlighted efforts related to conducting assessments of the unmet social needs of patients (e.g., housing, access to food) as a part of routine medical care in hospitals or health systems and connecting individuals to social services if the results of the screening show that individuals need assistance.

Recommendations:

Hospitals and organizations interested in supporting hospitals in population health work could consider:

- Identifying opportunities for building on population health management efforts and moving upstream to address social determinants of health.
- Establishing a process to continuously identify, capture and share examples of practical population health strategies by sector (e.g., housing, transportation), including evidence of potential impact of these strategies on health outcomes, of return on investment (ROI) and of required level of resource investment for impact.

Reasons for Engaging Hospitals in Population Health Work

Based on Interviews with Public Health Institutes (PHIs)

The interviewees from public health institutes (PHIs) listed a number of factors that led to their decision to engage hospitals in population health work. Several interviewees noted that they became interested in working with hospitals through their work on Community Health Needs Assessments, policy matters related to Medicare, access to care and the implementation of community benefit programs. Increase in organizational size and capacity also were cited as

contributing factors to the provision of new services by hospitals or health systems. Furthermore, interviewees noted the passage of the Affordable Care Act (ACA) prompted hospitals to identify ways for adapting to the changing health care delivery landscape and created opportunities for public health institutes to help hospitals navigate these new realities. Population health efforts also were seen by the interviewees as an opportunity to bridge the divide between public health and health care and to advance the organizational mission of the PHI to improve health. Additionally, the interviewees noted the hiring and purchasing power of hospitals make them critical partners in health-improvement efforts. They acknowledged increased interest by hospitals in exploring approaches for engaging in population health and a shift of community benefit programs from marketing departments to departments specifically devoted to population health activities. The interviewees felt well-positioned to provide the needed support to hospitals given their current role as information brokers and conveners of conversations.

Recommendations:

Hospitals and organizations interested in supporting hospitals in population health work could consider:

- Integrating a goal regarding this portfolio of work into their organizational strategic plans and developing an accompanying workplan or theory of change for meeting the strategic goal.
- Identifying opportunities to explicitly integrate population health efforts into Community Health Needs Assessments (CHNAs).

Relevant Expertise

Based on All Interviews

Organizations interested in working with hospitals on population health issues need to possess a diverse set of skills and competencies. Knowledge or understanding of health care language, payment systems, public health and pressures and issues that hospitals face are key preconditions for successful engagement with hospitals in population health. The need for facilitation skills and a background in health care administration have been recognized as critical for working with hospitals. A representative of a health system emphasized that “strong knowledge of social determinants of health and theories around their impact on clinical health” helped them to advance efforts in population health. The respondent also emphasized having

"strong knowledge of payment systems and how they work …" Furthermore, it was noted that understanding the local landscape and the state-level efforts around Medicaid and the Children's Health Insurance Program (CHIP) would be critical for identifying a potential role for an organization. Finally, the respondent suggested that the "ability to build partnerships and find ways that are mutually beneficial" would be essential for advancing population health work. Another representative of a health system discussed the importance of training needed to enable organizations to translate population health "into the clinical world." Other essential skills/knowledge referenced by the respondent included the ability to conduct cost-effectiveness analysis, health policy, health economics and data visualization.

Recommendations:

Hospitals and organizations interested in supporting hospitals in population health work could consider:

- Assessing staff knowledge and skills necessary to engage in efforts focused on addressing population health.
- Identifying and implementing strategies for closing potential gaps in skills and knowledge. Strategies could include peer learning opportunities, webinars, workshops and classes, among others.

Provided Services

Based on All Interviews

The interviewees highlighted three types of support that more often were provided by their organizations to hospitals:

- Facilitation services.
- Different approaches that can be effective in moving health care upstream. Specifically, gathering and sharing examples from hospitals across the country.
- Technical assistance and information related to equity, population health data, logic models or other issues.

A representative of one health system noted that they have been specifically engaged in providing thought leadership and sharing new learnings and approaches with their health

systems and audiences across the county (e.g., presenting at conferences, publishing research). Their staff also served as facilitators, helping others to "identify solutions and recommendations based on their shared learning and common experiences." Another representative said their organization focused on developing logic models, helping their health system assess effectiveness of interventions, and training Community Health Workers (CHWs).

The organizations provided a variety of other services as well, such as:

- Assisting in conducting Community Health Needs Assessments (CHNAs).
- Providing grant writing assistance.
- Helping hospitals get funding for implementation of population health efforts.
- Providing research assistance.
- Assisting with logic modeling.
- Providing evaluation services.
- Helping access current research.
- Assisting with convening community stakeholders and engaging leadership.
- Conducting Health Impact Assessments (HIAs).
- Placing fellows at the hospitals to provide mentoring and support.
- Supporting statewide convenings.

In general, the interviewees reported that the provision of these services were mutually beneficial and that hospitals had positive experiences with them.

Recommendations:

Organizations interested in supporting hospitals in population health could consider:

- Reviewing services outlined in the section "Provided Services" and identifying services that can be provided by their organization. When making decisions, consider challenges encountered by these organizations during the provision of services.

Hospitals could consider:

- Reviewing services outlined in the section “Provided Services” and identifying services that could assist their organizations in advancing population health efforts.

Suggestions for Organizations

Based on All Interviews

The interviewees provided a variety of suggestions for other institutes and/or organizations interested in engaging hospitals in population health. Several interviewees stressed the importance of understanding the culture and business model of each hospital type. Varying readiness levels of hospitals to tackle population health work was another critical issue raised by interviewees. Providing too much information or offering a variety of options to a hospital with a lower level of readiness can overwhelm an organization and hinder their interest in engaging in population health. To avoid these issues, the interviewees suggested: 1) assessing hospital readiness by reviewing past experiences with Community Health Needs Assessments (CHNAs), community benefit portfolio of work and other community health-related practices; 2) creating and articulating a clear goal; 3) identifying activities/projects for different levels; and 4) offering specific and practical tools. Providing education or information to hospitals was seen as an initial step. To sustain momentum, however, the interviewees recommended providing hospitals with detailed guidance and tools for initiating and implementing efforts.

The interviewees provided a variety of suggestions for hospitals interested in advancing population health efforts and organizations focused on supporting hospitals in these efforts. Specifically, the interviewees suggested the following strategies for hospitals:

- Ensure that the definition of “population health” used by a hospital focuses on addressing determinants of health or social and environmental factors that shape health (e.g., housing, food insecurity, education) and health disparities for populations beyond patients.
- Ensure a consistent population health definition is used across the organization and with partners.
- Establish a position (e.g., single office) to coordinate population health activities.
- Include socioeconomic data and information about the social determinants of health within electronic health records.

- Engage with partners such as local health departments, community organizations and university extension offices around population health efforts.
- Conduct a joint community health assessment with the local health department.
- Use available resources (e.g., County Health Rankings, CDC Community Guide, case studies around the state) to identify strategies for advancing population health efforts.
- Identify ways for capturing and evaluating benefits related to population health work.

Furthermore, the interviewees suggested the following tips for building a successful collaboration with hospitals around population health:

- Assist hospitals with identifying financial streams to support their work in population health.
- Find and recruit champions from hospitals that will advocate for population health.
- Build relationships with organizations that closely work with hospitals such as state hospital associations.
- Build a shared vision and goals rather than approaching hospitals with financial requests.
- Convene stakeholders (e.g., hospital staff, leadership, boards) to identify their needs and priorities.
- Convene or participate in conferences discussing hospital engagement in population health.
- The interviewees also noted the value of peer learning and suggested establishing cross-learning opportunities for PHIs interested in assisting hospitals with advancing their population health efforts.

Recommendations:

Organizations interested in supporting hospitals in population health work could consider:

- Incorporating strategies outlined in the section “Suggestions for Organizations” in planning and implementing any projects or efforts around population health with hospitals and health systems.

Hospitals could consider:

- Incorporating strategies outlined in the section “Suggestions for Organizations” in planning and implementing any projects or efforts around population health.

District Discussions with Hospitals and Health Systems in Kansas

Between April 1 and April 20, 2018, KHI participated in six district hospital meetings convened by the Kansas Hospital Association (KHA). These meetings primarily were attended by Chief Executive Officers (CEOs) from 79 hospitals. The meetings presented KHI and KHA with a valuable opportunity to enhance the understanding of population health by hospitals and health systems and capture their interest and current activities in population health. To achieve these goals, KHI co-delivered a presentation titled: *“Population Health or Community Health: Definitions, Trends and Needs.”* Additionally, in collaboration with KHA, KHI administered several polls. The polls were created and launched using Poll Everywhere, an online platform that supports live interactive audience participation. The polls asked the participants to provide information on the types of population health activities their hospitals engage in. The polls also asked about efforts implemented for their community — beyond patient populations — related to the social determinants of health.

Out of 146 responses offered by 83 individuals, “providing charity care” (49 responses) and “conducting community health needs assessments” (38 responses) were reported as the most frequent activities hospitals engage in as part of their community or population health work. “Addressing issues in the community — such as transportation, housing, access to food or other” received the fewest responses (5). Results from the second poll (163 responses provided by 72 individuals) also suggest that a higher proportion of respondents implemented population health efforts in the areas of “access to healthy food” (40 responses) and “economic development” (34 responses), while a lower proportion of respondents implemented efforts in the area of “environmental quality in the community (6 responses).”

Hospital leadership also discussed the incentives and challenges they encounter as they engage in population health. Fifty-five percent of respondents in the third poll reported that the main incentive for their hospital was to “improve the health of the community.” Several respondents indicated that improving the health of the community would help them address high rates of readmissions, high costs of care and unnecessary emergency room utilization. As noted in the final poll (139 responses provided by 83 respondents), when hospitals have invested in

population health, they have encountered challenges related to “available funding” (55 responses) and “current reimbursement structures” (52 responses). The challenge that received the fewest responses (3) was “lack of leadership buy-in.”

Recommendations:

Hospitals could consider:

- Identifying innovative local practices for funding population health efforts.
- Developing cross-sector partnership to achieve sustainable impact.

Organizations interested in supporting hospitals in population health work could consider:

- Assisting hospitals in identifying opportunities for implementing population health activities in the areas of “housing” and “environmental quality.”

Survey of Kansas Hospitals

The Kansas Health Institute (KHI) and the Kansas Hospital Association (KHA) collaborated on a population health initiative to assess the engagement of Kansas hospitals and health systems in population health and identify resource needs for this work. As part of the initiative, a survey was conducted to better understand efforts in the area of population health, including definitions of population health, strategies utilized, benefits and challenges. The survey was distributed to CEOs of the 124 KHA member hospitals on May 3, 2018. A total of 88 survey responses were received, and 57 sufficiently complete survey responses were retained for analysis as the survey closed on June 10, 2018.

The survey questions were informed by the results of the polls administered at the KHA district meetings. The survey contained 26 questions and included skip logic to allow respondents to provide more information only for relevant areas.

The survey results are highlighted below.

Respondents Indicating their Hospital/Health System had Specific Population Health Staff

- One-third (33.3 percent) of respondents reported their organization had a specific individual responsible for population health.
- However, 57.9 percent reported their organization did not have a specific individual.

Understanding of Population Health Terms and Definitions

- Three-quarters (75.4 percent) reported they had a clear understanding of the term "public health" and almost three-quarters (73.7 percent) had a clear understanding of the term "community health."
- Slightly more than half (50.9 percent) agreed they had a clear understanding of the term "population health management" and 57.9 percent had a clear understanding of the term "population health."

Focus and Impact

- Three-quarters (75.5 percent) of respondents agreed or strongly agreed their organization should focus on addressing the health of populations beyond basic patient care, whereas only 5.3 percent disagreed.

Awareness and Involvement

- A majority (ranging from 56.1 percent to 98.2 percent) of respondents indicated that their organization was extremely or moderately aware of the needs of their community across all areas.
- The highest level of awareness (extreme and moderate) was for "access to care," which was nearly universal (98.2 percent).
- The lowest level of awareness was reported for "environmental quality in the community" with slightly more than half (56.1 percent) of respondents reporting extreme or moderate awareness.
- Almost all respondents thought their organization should be involved (to a great or moderate extent) in addressing "access to care" (98.2 percent), while only 17.6 percent of respondents thought their organizations should be involved in housing.

Incentives, Challenges and Tools

- Among the incentives for engaging in population health activities, "improve health of the community" and "decrease admissions" ranked highest.
- The greatest challenges were "available funding" and "current reimbursement structures."
- The tools or resources needed most were "help to identify funding sources" and "provide training to hospital staff."

Recommendations:

Organizations interested in supporting hospitals in population health work could consider:

- Assisting hospitals/health systems in reaching a common understanding of the term "population health." Specifically, organizations could help hospitals differentiate between "population health" and "population health management."
- Developing and co-delivering (e.g., in collaboration with a state hospital association) a population health training to hospitals across the state.

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Introduction

There has been a growing interest among hospitals and health systems to engage in population health efforts. In part, this interest was sparked by a statutory requirement for nonprofit hospitals to conduct Community Health Needs Assessments (CHNAs) under the Affordable Care Act (ACA). These assessments create an opportunity for hospitals to engage with stakeholders across sectors, understand the needs of their communities and implement strategies that focus on meeting these needs. Additionally, the United States health care system has begun the process of moving toward a value-based payment model. This evolution toward value-based and other alternative reimbursement models could further encourage hospitals to engage more strategically in population health efforts. According to the American Hospital Association (AHA): "An aging population, increasing rates of chronic disease and the onset of value-based payment structures are among the many drivers that have moved hospitals and health systems in recent years to take a more prominent role in disease prevention, health promotion, and other public health initiatives."[15]

In order to improve the health of Kansans, it is essential to continue supporting hospital efforts to address population health. Hospitals and health systems are cornerstones of their communities. Not only do they provide care 24 hours a day, 365 days per year, but they all are strong economic engines. Based on the January 2018 Kansas Hospital Association economic report, *The Importance of the Health Care Sector to the Kansas Economy*,[16] hospitals employ more than 86,000 Kansans across the state. They also are significant purchasers of goods and services, resulting in the creation of an additional 75,000 jobs statewide. Hospitals and health systems keep communities strong, healthy and vibrant. They also are expanding their focus outside the walls of their institutions to improve population health.

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- Reviewed relevant literature. The goal of the review was to summarize the current literature regarding population health concepts, and the role of and activities in population health by hospitals and health systems. The literature review included articles published in the last 10 years in peer-reviewed journals and grey literature (e.g., white papers, reports, guidance documents, issue briefs, research reports and theses).
- Conducted 14 key-informant interviews across the country during March and April 2018. The interviewees included 11 public health institutes, and representatives of two health systems and a university.

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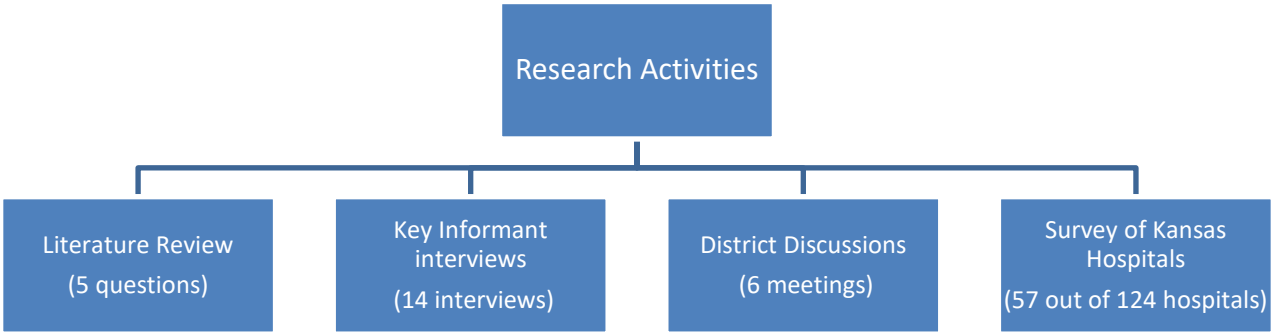
The information gathered during the national environmental scan and the Kansas-specific activities was used to develop key findings and recommendations for organizations interested in helping hospitals engage in population health efforts.

Methods

Overview

The research questions were addressed through (1) literature review, (2) semi-structured key informant interviews conducted nationwide, (3) Kansas hospital-specific information collected at district meetings of the Kansas Hospital Association (KHA), and (4) a survey of Kansas hospitals (*Figure 1*). A comprehensive literature review was conducted on population health definitions, activities, incentives and challenges that hospitals/health systems have been engaged in or encountered related to population health. Through content analysis of key informant interviews with public health institutes and representatives of health systems and a university, several major themes were identified and presented in this report to provide information regarding issues shaping efforts in population health by hospitals. To better understand the engagement by Kansas hospitals in population health, KHI collaborated with KHA and participated in its district meetings. Information collected at these KHA district meetings was used to assist in the development of a survey specific for Kansas hospitals. The survey was administered to KHA member hospitals to assess the level and types of population health work in which Kansas hospitals have been engaged.

Figure 1. **Research Activities**



Source: Kansas Health Institute (2019). The Role of Hospitals in Population Health: Findings from Statewide Survey and Local Perspectives.

Literature Review

The goal of the literature review was to summarize the current literature regarding roles and activities in population health by hospitals and health systems. In general, the literature review process was conducted concurrently with the interviews. However, several key articles and reports were selected and reviewed to assist the development of the interview guides.

The literature review included a review of articles published in the last 10 years in peer-reviewed journals and grey literature (e.g., white papers, reports, guidance documents, issue briefs, research reports, theses). To identify these materials, KHI searched Google, Google Scholar, PubMed and the sites of relevant research and professional organizations, including the American Hospital Association, the National Academy of Sciences, the Centers for Disease Control and Prevention, the Robert Wood Johnson Foundation and the Association of Health Care Journalists, among others. The inclusion criteria were literature published in the last 10 years and findings that were directly relevant to the research question (versus providing contextual information or information related to a similar but slightly different topic). Literature were summarized using the following categories (*Figure 2*).

Figure 2: **A Template for Summarizing Literature Review**

Organization/ Author	Type of Literature (e.g., journal, gray)	Population & Sample	Year	Study Design & Limitations	Findings	Strategies Implemented & Notes

Source: Kansas Health Institute (2019). The Role of Hospitals in Population Health: Findings from Statewide Survey and Local Perspectives.

The studies' findings were reviewed and sorted by themes. For more information about literature review, please see *Appendix A,* page A-1.

Key Informant Interviews

To provide a deeper understanding of issues affecting efforts by hospitals in population health, the KHI project team conducted key informant interviews with selected public health institutes, representatives of health systems and a university. These groups were selected for specific reasons.

- PHIs: Understand how peer institutes approach their work with hospitals/health systems. KHI is a PHI and a member of the National Network of Public Health Institutes (NNPHI).

Learning about experiences by other PHIs working with hospitals/health systems in population health, utilized strategies, challenges and lessons learned are relevant to KHI given that PHIs have similar mission, goals, stakeholders and focus areas.

- Representative of health systems: Learn about the perspectives of hospitals and health systems on population health, including utilized strategies and activities they implemented in this area. Interviewing hospitals or health systems are critical as they are the target audience or implementers of the population health activities.
- Universities: This group of stakeholders has been essential in conducting research as well as assisting hospitals with population health work. Although the organizational structure and work of KHI differs from universities, its role in research and education aligns with activities of those universities. Thus, learning about the experiences of universities working with hospitals in population health, utilized strategies, challenges and lessons learned are relevant to KHI.

The interviews provided additional context and background surrounding each topic which were used to develop the key findings and recommendations for KHI.

To ensure that the interviewees can address research questions, the inclusion criteria were:

- PHIs and Universities: Organizations that work with or have assisted hospitals/health systems with implementing population health efforts.
- Health Systems/Hospitals: Organizations themselves or entities that are a part of health systems that implemented population health efforts.

Furthermore, the exclusion criteria included PHIs and/or universities that did not engage directly with hospitals or health systems around population health issues. Hospitals/health systems or entities are a part of these organizations that did not implement population health efforts as defined from the public health perspective (e.g., work on determinants of health, populations beyond patients and disparities). In order to recruit interviewees, KHI utilized the strategies shown in *Figure 3,* page 6.

Based on the recommendations from NNPHI, KHI selected a purposeful sample of PHIs that had engaged in various efforts in their states. The efforts included: hosting a regional forum on hospitals, health systems and population health, leading collective impact initiatives between hospitals and health departments, and supporting efforts by hospitals/health systems around Community Health Needs Assessments (CHNAs). From PHIs that responded to the

announcement in the NNPHI Top 5 Newsletter and those who participated in the Midwest Forum on Hospitals, Health Systems and Population Health: Partnerships to Build a Culture of Health, KHI selected PHIs to interview that had experience in population health work with hospitals. The representatives of two health systems were selected for interviews because they have been leading and/or supporting population health efforts within their health systems. Additionally, one of the health systems was featured in research articles as a champion in the field of population health.

Figure 3. **Strategies Used to Recruit Key-Informant Interviewees**

Strategies	Details	PHI	University	Representative of Hospitals/ Health Systems
1. Asked the National Network of the Public Health Institutes (NNPHI) to suggest potential institutes.	The KHI project team asked NNPHI to suggest PHIs that had experience working with hospitals and health systems in population health.	X (4)		
2. Posted a recruitment announce-ment in the NNPHI Top 5 News-letter.	The recruitment announcement focused on PHIs who have been engaged with hospitals and health systems in population health work (initiated projects/activities with hospitals (e.g., hot spot mapping); helped to implement CHNA and/or use social determinants of health data; conducted joint convenings; and completed research products (e.g., issue briefs, presentations, white papers).	X (4)		

Figure 3 (continued). **Strategies Used to Recruit Key-Informant Interviewees**

Strategies	Details	PHI	University	Representative of Hospitals/ Health Systems
3. Contacted selected participants of the Midwest Forum on Hospitals, Health Systems and Population Health: Partnerships to Build a Culture of Health.	The KHI project team reviewed a list of participants and outreached to several PHIs and health systems to solicit their interest in an interview. During an initial conversation or email communication, KHI used the "inclusion criteria" to determine their eligibility for the study.	X (3)		X (1)
4. Asked organizations selected for interviews to suggest potential candidates.	The interview participants were asked to suggest other institutes, hospitals/health systems and/or universities that might be working with hospitals/health systems to address population health.	X	X (1)	X
5. Identified potential key informants during the literature review.	During the literature review, the KHI project team identified organizations that engaged in population health work.		X	X (1)

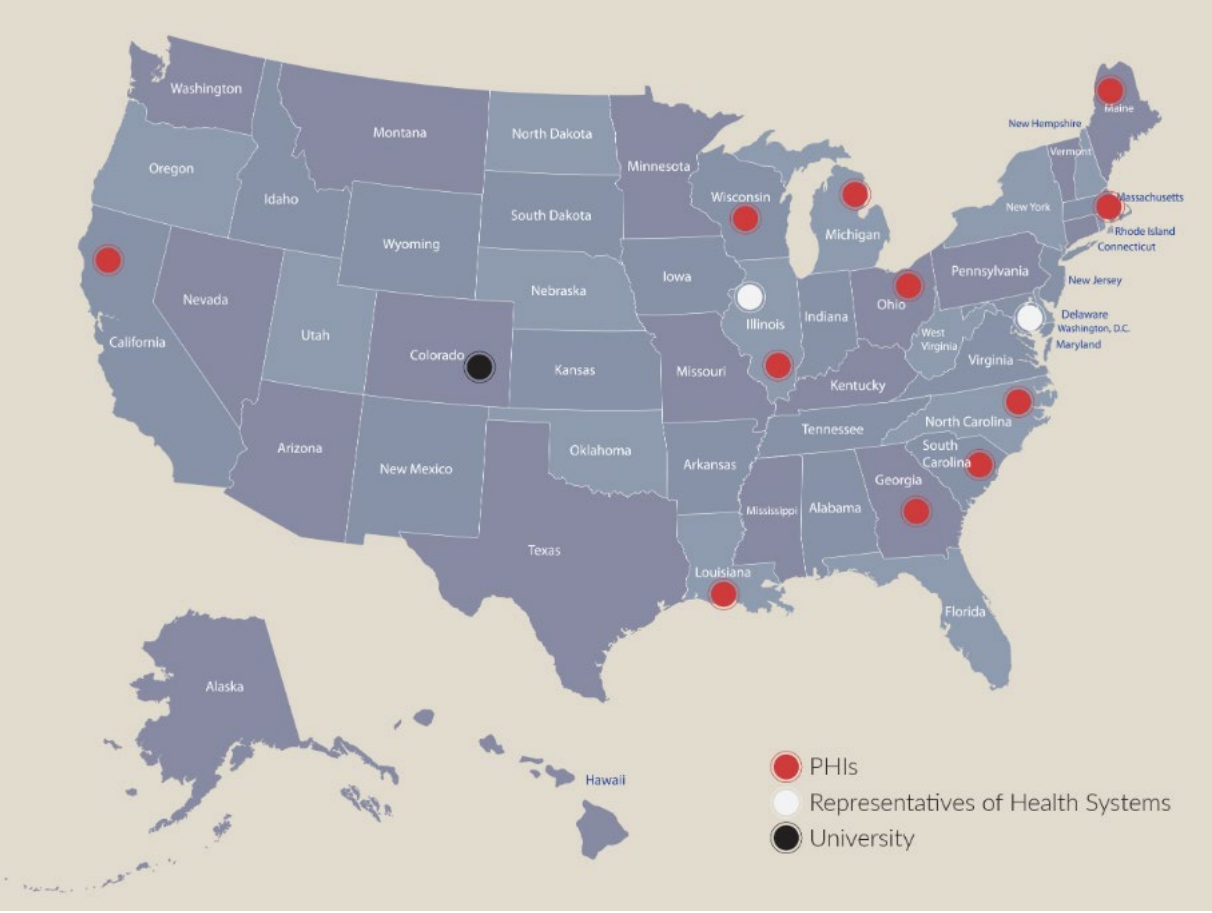
Source: Kansas Health Institute (2019). The Role of Hospitals in Population Health: Findings from Statewide Survey and Local Perspectives.

Overall, the goal was to recruit 12 organizations: six to eight PHIs and four hospitals or health systems. In the end, KHI was able to recruit 11 PHIs, and representatives of two health systems and one university, making the total number of interviewees 14. During the recruitment process, KHI experienced several challenges recruiting hospitals and health systems in other states as it did not have an established relationship with them. One university also was recruited as it was highly recommended by several interviewees.

The 14 organizations were located in 13 states (*Figure 4*, page 8). With the majority of interviewees being PHIs, the summary of key informant interviews is likely to mainly reflect

perspectives of the PHIs. However, when representatives of health systems provided different responses than the rest of interviewees, their perspectives are noted separately.

Figure 4. **Locations of Key Informant Interviewees**



Source: Kansas Health Institute (2019). The Role of Hospitals in Population Health: Findings from Statewide Survey and Local Perspectives.

Profile of Interviewees

The majority of the interview participants represented senior leadership (e.g., chief executive officer, vice president, director or senior fellow). The length of time working with hospitals and/or health systems for interviewees ranged between four and 60 years. Specifically, the organizations reported the following length of their work with hospitals/health systems:

- 5 organizations = between 4-6 years
- 7 organizations = between 5-10 years
- 2 organizations = more than 30 years

The interviewees also reported working with both hospitals and health systems. Several organizations worked with 10-20 hospitals and/or health systems, while others worked with 30 or more. One organization worked with more than 100 hospitals/health systems. Additionally, the interviewees reported that the number of hospitals would be greater if they were to take into account hospitals/health systems that they engaged with as part of their coalition work or other types of joint projects.

PHIs: The participating PHIs varied in their organizational structure, size and focus areas. Several PHIs were university-based, while others described themselves as being independent entities. PHIs also varied in size. Out of seven PHIs that indicated the number of individuals that currently work at their PHI, three PHIs had between nine and 14 staff members, one PHI had 25 staff members and three PHIs reported having 60-95 members. In terms of their overall focus areas, PHIs highlighted behavioral health, long-term care, health system transformation (public health and health care), rural health and health insurance (Medicaid and private).

PHI interviewees also indicated that their organizations provide services in research and evaluation, technical assistance, strategic planning and convening, among others. Several PHIs highlighted areas in which they are currently developing capacity, including public health law and policy, opioids, global health, public health 3.0, health care workforce and Health in All Policies.

Three additional organizations interviewed included a university and representatives of two health systems. These organizations had between five and 10 years of experience working in population health. Each health system was represented by an entity within a larger health system. Both entities conduct research and focus on identifying evidence-based practices that can be adapted by their health system and nationally.

Interview Process

Interviews were conducted via telephone from March 12 to April 24, 2018. Interviews were semi-structured with a standard set of questions asked of each stakeholder. Two sets of interview questions/guides were developed for PHIs and other organizations (hospitals and universities) respectively so that the questions could be tailored. Interviewees provided perspectives on areas included in the environmental scan such as population health terminology, supportive structures for engaging in population health, challenges and considerations. In some cases, questions were modified slightly depending on applicability to the organization and role of the interviewee, and unique follow-up questions sometimes were

asked to provide clarity. Interviewees also were asked to provide suggestions for other public health institutes or peer organizations interested in engaging in this work. Interviews were voluntary and confidential. Interviewees were allowed to skip questions or sections of the interview. The interviews took an average of one hour to complete, but the length was dependent upon the extent of the answers given by each interviewee. Once complete, interviews were analyzed using inductive coding to identify common themes in interview responses. The key-informant questions were approved by the KDHE Institutional Review Board (IRB). For more information about the methodology and question guides, please see *Appendix C*, page C-1.

Discussion Groups: KHA Hospital District Meetings

Between April 1 and April 20, 2018, KHI participated in six district hospital meetings convened by the Kansas Hospital Association. These meetings primarily were attended by Chief Executive Officers (CEOs) from 79 hospitals.

The meetings presented KHI and KHA with a valuable opportunity to enhance the understanding of population health by hospitals and health systems and capture their interest and current activities in population health. To achieve these goals, KHI co-delivered a presentation titled: *"Population Health or Community Health: Definitions, Trends and Needs."* Additionally, in collaboration with KHA, KHI administered several polls. The polls were created and launched using Poll Everywhere, an online platform that supports live interactive audience participation. The polls asked the participants to provide information on the types of population health activities their hospitals engage in. The polls also asked about efforts implemented for their community — beyond patient populations — related to the social determinants of health.

A total of four polls related to population health were administered during each district meeting. Each attendee from the hospitals was asked to reply to the polls by using their cell phone or other electronic device. The attendees provided their answer by sending a text message to the number provided by KHA or by clicking on the customized link. All polls included multiple-choice questions. The polls did not include any open-ended questions.

Each participant was asked to respond one time to each poll. However, the participants could undo and re-submit their responses. The responses were anonymous. For two out of four poll questions, the respondents could choose up to two answers. For one question, the respondents were asked to provide one answer, and for the last question they were asked to select "all that apply."

After the poll closed, the results were displayed on the screen (as a bar or a pie chart). To learn more about the results, the KHI staff member led a brief discussion during which participants provided additional insights to their responses and reactions to the poll results. The information provided by participants in this discussion was summarized by KHI staff.

Although only participants from the hospitals were asked to respond to the polls, some hospitals had more than one representative at the meeting and responded. In addition, other attendees (e.g., staff, sponsors) could have provided their answers as well. As a result, the number of respondents represents the number of individuals responding to each poll rather than the number of hospitals in attendance at the district meetings.

Survey of Kansas Hospitals/Health Systems

The Kansas Health Institute (KHI) and the Kansas Hospital Association (KHA) collaborated on a population health initiative to assess the engagement of Kansas hospitals and health systems in population health and identify resource needs for this work. As part of the initiative, a survey was conducted to better understand the efforts of Kansas hospitals in the area of population health, including definitions used, strategies utilized, benefits and challenges.

The survey questions were informed by the results of the polls administered at the KHA district meetings. The survey contained 26 questions and included skip logic to allow respondents to provide more information only for relevant areas.

The survey included four main domains:

- Hospital characteristics including population health resources (staffing and allocations), hospital district, and number of acute licensed beds.
- The understanding, awareness and views toward population health and activities.
- Population health engagement areas and specific activities (activated by hospital population health engagement area selections).
- Incentives and barriers for hospital engagement in population health.

The survey was distributed to CEOs of the 124 KHA member hospitals on May 3, 2018. Potential respondents were sent a link to the survey by KHA and no identifying information was collected to allow for an anonymous survey. Data was collected through the Qualtrics survey system. The survey was anonymous, and no identifiers were requested of the respondents.

For each of the variables analyzed, univariate descriptive statistics provide an overall picture of the data. For those questions that included ranking, a summary score, the average rank, the median rank, and the mode (rank that occurs most often) were calculated to identify patterns for the ranks across respondents for each of the question items. Furthermore, summary scores were calculated by multiplying the rank by the number of responses. The order of the rankings were reversed so that the highest value receives the top rank (highest rank = 8 [or 6 or 7 depending on the number of choices]; lowest rank = 1). The "Other" category in these question items was removed from each rank analysis as they could not be analyzed similarly to other rank options and due to very few responses in that category.

Results

Structure of the Results Sections

The Results sections of the report includes three main parts. The first two parts describe findings of the national environmental scan (literature review and key informant interviews):

- Part I. Defining "Population Health," Opportunities and Challenges.
- Part II. Understanding Interest of Public Health Institutes in Population Health.

Each part includes between five and seven sections based on the research questions. Each section follows this order:

- Lists a topic (relevant to a research question).
- Provides an overview of key findings and recommendations.
- Provides an overview of findings from the literature review.
- Provides an overview of findings from the key informant interviews.
- Provides a conclusion.

The third part of the report focuses on the Kansas specific findings from district discussions with hospitals and the online survey. It was not part of the national environmental scan. However, it is included in the report as it provides valuable insights and recommendations for KHI.

- Part III. Findings from the District Discussions and Survey with Kansas Hospitals.

Part I. Defining "Population Health," Opportunities and Challenges

Definition of Population Health

Based on Literature Review and All Interviews

Findings	Recommendations

• In general, "population health" is a widely used term across both the public health and health care sectors. Despite widespread use, there is no consensus on the definition.
 	
• Two primary perspectives on "population health" have emerged: *public health* and *health care*.
 	
  ○ From the public health perspective and according to the work of David Kindig and Greg Stoddard, population health usually refers to non-clinical approaches (e.g., transportation, housing, access to food) for improving the health of a group of individuals, including the distribution of such outcomes within the group. These groups can be geographically defined (zip code, city) or they may share some characteristics such as age or income status.
 	
  ○ From the health care perspective, population health is usually interpreted in the context of "population health management" (improving clinical health outcomes of individuals through improved care coordination and patient engagement supported by appropriate financial and care models).
 	
• Both approaches emphasize the importance of improving health outcomes of populations, use of data, reduction of health care costs and patient engagement.
	• Hospitals and organizations interested in supporting hospitals in population health work could consider:
	
	  ○ Convening stakeholders around the state to develop and build consensus around a common definition of "population health" for Kansas.
	
	  ○ Adopting a working definition of "population health" to allow for clear and consistent communication with both internal and external audiences. Ensure that this definition considers the spectrum along which this term previously has been defined by health care and public health.
	
	  ○ Developing a communication strategy — that may include a standard set of slides — around the definition of population health.

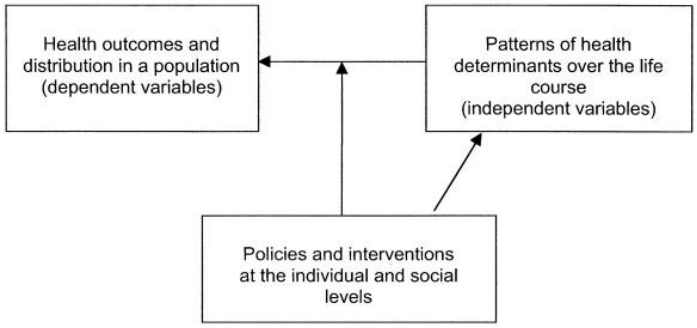
What KHI Learned from the Literature

This purpose of this section is to address three primary questions: 1) what is "population health?" 2) what terms are used to describe "population health?" 3) how does "population health" differ from "population health management?"

While other definitions might have existed prior, the primary definition cited for "population health" in contemporary usage is based on the work of David Kindig and Greg Stoddart in 2003. From this work, "population health" was defined as "the health outcomes of a group of individuals, including the distribution of such outcomes within the group."[17]

This definition emphasizes the total population and is based on geographic areas or specific population groups (e.g., persons with disabilities) and is concerned with the interactions of determinants of health.[18] Kindig and Stoddart further defined health outcomes as the output of health determinants (inputs) while policies were "the science of analyzing the inputs and outputs of the overall health and well-being of a population and using this knowledge to produce desirable population outcomes."[19] See *Figure 5* for the "population health" framework. This approach arises from an understanding of determinants of health and their influence on health — "*population health" relates to broad health outcomes and an understanding of the determinants that contribute to them*.

Figure 5. **Kindig and Stoddart's "Population Health" Framework**



Note: The field of population health investigates each of these components and their interactions.
Source: Kindig and Stoddart, 2003.

Population Health Management

In the health care industry, the term population health is often used as a shorthand to mean the approach to provide care to clinical populations. This "Population Health Management" approach is based on the "population health" popularized by Kindig and Stoddart but more narrowly focuses on patient-based approach to care which works to address costs and conditions related to poorer outcomes.[20]

In this vein, the Institute for Healthcare Improvement (IHI) definition of "population health management" is concerned with managing patient populations to help improve health and to reduce health care related costs.[21]

"Population health management" arose from the IHI Triple Aim, which was developed to optimize health system performance. The Triple Aim explicitly defines population not as geographic but based on "enrollment." That is, a population that can be registered and tracked to follow health. The health of these enrolled populations is the responsibility of a third party that is "able to recognize and respond to patients' individual care needs and preferences, to the health needs and opportunities of the population (whether or not people seek care), and to the total costs of care."[22]

The AcademyHealth blog defines this as a middle approach between individual patient care and the public health approach — a "sweet spot" with potential for multi-sector collaboration.[23] This approach arises from a clinical intervention perspective to addressing the health of patient populations — "*population health management" relates to clinical population health outcomes improved by clinical interventions*.

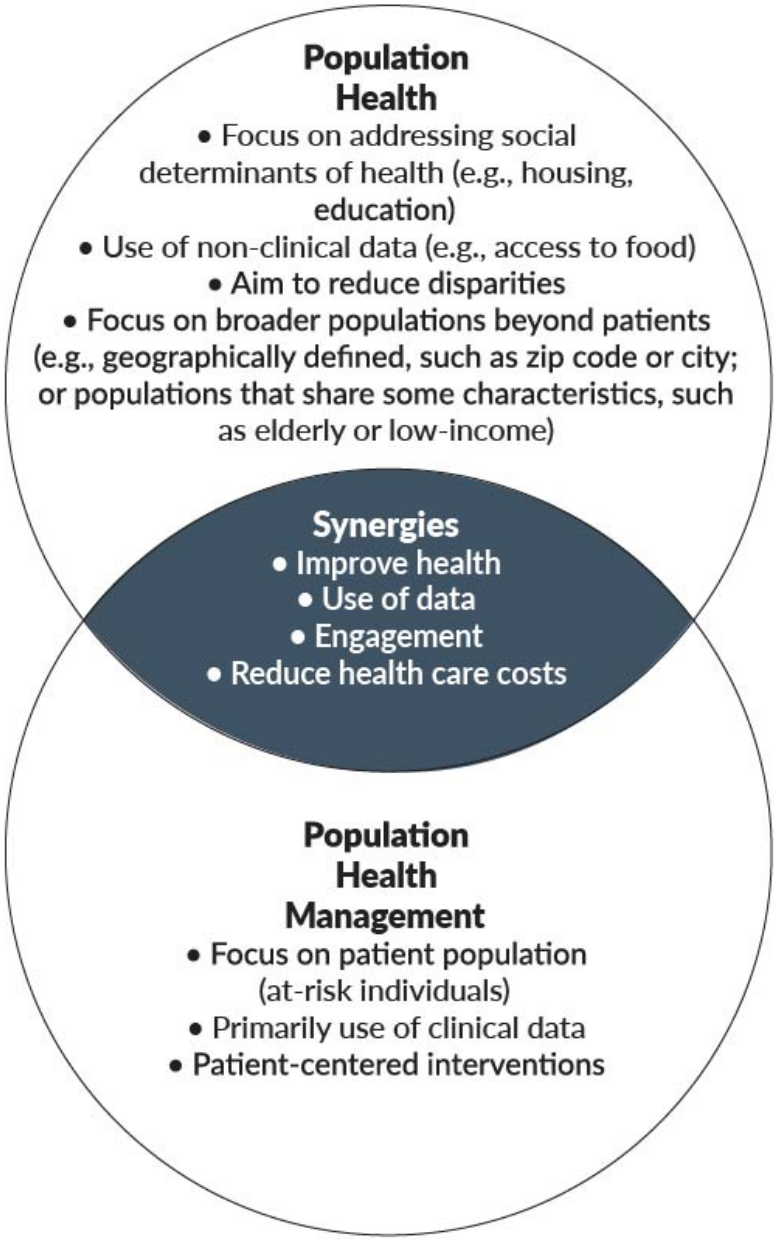
Clinical adoption of the term population health to mean "population health management" has led to a narrower focus on clinical populations, with an emphasis on management of the health conditions of particular clinical populations. This makes sense as the population of immediate interest to hospitals is the patient population.

"Population health management" can be thought of as a subcomponent of a successful population health approach but not as population health itself.[24] While hospitals are able to take care of patients using "population health management" they are less able to implement interventions to improve community health (defined broadly as non-clinical health interventions) and successful population health work involves cross-sectoral to address health outcomes and the determinants that contribute.[25]

Population Health Versus Population Health Management

Differing perspectives between public health and the health care field contribute to different definitions and usage of the term. *Figure 6* highlights key differences and similarities between "population health" and "population health management."

Figure 6. **Synergies and Differences Between "Population Health" and "Population Health Management"**



Source: KHI summary of the definitions developed by Kindig, D. & Stoddard, G. (2003) and the American Hospital Association (2018).

Furthermore, *Figure 7* provides additional details about potential differences and areas of overlap between "population health" and "population health management."

Figure 7. **Characteristics of Population Health and Population Health Management**

Areas	Population Health	Population Health Management	Areas of Overlap	Key Differences
Populations	Geographic/ characteristically defined (e.g. low-income individuals)	Clinically defined	Population health management can be considered a subset of population health.	• Population health emphasizes geographic/ shared group identity • Population health management ascribes group status based on disease and utilization (often focus on high-cost populations)
Interventions	Social determinants; disease prevention at the social determinant level; community health promotion; social policy changes	Individual health drivers, disease management; Patient health promotion; addressing health care costs	Disease prevention and health promotion	• Population health focuses on addressing social determinants of health for populations beyond patients. • Population health management works to track individual health drivers in patient populations with particular outcomes. Usually, interventions related to costs and disease management of conditions for particular patient groups (e.g. low-income diabetic patients). However, some interventions can focus on addressing determinants of health but focus on patients only.

Figure 7 (continued). **Characteristics of Population Health and Population Health Management**

Areas	Population Health	Population Health Management	Areas of Overlap	Key Differences
Measurement	Health status of whole population by assessment; community efforts/changes; disease response; outbreak tracking and reporting; health status of population	Health status of patient population by assessment, health care outcomes, cost impacts	Health status is of interest to both as well as tracking intervention. Both approaches are interested in the output (health outcomes)	• Population health is interested in the output related to health outcomes and associated social determinants at large. • Population health management is interested in the outputs of health outcomes and health care utilization and costs. Social determinants may be measured to understand approaches to provide interventions.

Source: Kansas Health Institute (2019). The Role of Hospitals in Population Health: Findings from Statewide Survey and Local Perspectives.

Who uses "population health?"

- Organizations that use the term “population health” include the Institute of Medicine (now the National Academies of Science, Engineering and Medicine [National Academies]),[26] the National Rural Health Resource Center (NRHRC),[27] the Association of State and Territorial Health Officials (ASTHO),[28] the Medicaid and CHIP Payment and Access Commission (MACPAC), the American Hospital Association (AHA) and associated organizations (e.g., Hospitals in Pursuit of Excellence [HPOE] and Association for Community Health Improvement [ACHI]),[29] American Academy of Family Physicians,[30] Centers for Medicare and Medicaid Services (CMS),[31] the Institute for Healthcare Improvement (IHI)[32] and the National Advisory Council on Nurse Education and Practice (NACNEP).[33] However, the groups differ in their definitions and usage.

- The National Academies, MACPAC, ASTHO, NRHRC and NACNEP use the definition as developed by Kindig and Stoddart as their definition of population health, favoring a definition from the public health perspective. The NACNEP, however, builds upon the original definition from Kindig and Stoddart to more explicitly define population health as the application of health strategies, interventions, and policies at the population level "rather than through the episodic, individual-level actions common within acute care."[34]

- Other organizations define the term from a clinical perspective, focusing more on managing the conditions of patients rather than the population at large, which others have distinguished as "population health management."

Who uses "population health management?"

- "Population health management" gained traction with the inclusion of the Triple Aim from IHI at the federal level under the Obama administration. Moreover, the National Quality Strategy, led by the Agency for Healthcare Research and Quality on behalf of the U.S. Department of Health and Human Services (HHS), established a set of three aims that builds on the Triple Aim and is supported by Agency for Healthcare Research and Quality six priorities, including:

    - Making care safer by reducing harm caused in the delivery of care.

    - Ensuring that each person and family is engaged as partners in their care.

    - Promoting effective communication and coordination of care.

    - Promoting the most effective prevention and treatment practices for the leading causes of mortality, starting with cardiovascular disease.

    - Working with communities to promote wide use of best practices to enable healthy living.

    - Making quality care more affordable for individuals, families, employers and governments by developing and spreading new health care delivery models.[35]

CMS also modeled its quality strategy after AHRQ, adopting these same six priorities in pursuit of population health, with an emphasis on improving health for the Medicare and Medicaid populations.[36]

- The AHA, HPOE and ACHI base their definition of population health management on the Triple Aim, combining the definition of Kindig and Stoddart with three processes for a population health strategy: "1) Identify and analyze the distribution of specific health statuses and outcomes; 2) evaluate the clinical, social and economic, behavioral and environmental factors associated with the outcomes; and 3) implement a broad scope of interventions to modify the correlates of health outcomes."[37]

- Additionally, the AHA identifies five primary goals for a population health management strategy: "1) coordinate hospital-based interventions with community stakeholders and other key partners through mature collaborations; 2) increase preventive health services through coordinated care across the health care continuum; 3) provide culturally and linguistically appropriate care; 4) promote healthy behaviors; and 5) track population health metrics against dashboard targets."[38]

- The AAFP, while emphasizing the patient population, defines population health management as including the "health status and outcomes of the larger communities to which the physician and patient belong" and that it is essential to consider factors outside the practice when caring for patients.[39] This definition blurs population health and population health management.

What We Learned from Stakeholders

A total of 14 interviews were conducted, including 11 PHIs, representatives of two health systems and one university. In general, the findings present a summary of perspectives on each issue. With the majority of interviewees being PHIs, the summary of key informant interviews is likely to reflect primarily perspectives of the PHIs. However, when representatives of health systems provided different responses than the rest of interviewees, their perspectives are noted separately. In general, the majority of interviewees noted that their organization had a working definition of population health. However, two interviewees indicated that their organization hadn't developed or used a specific definition of population health and was operating under a common vision or consensus on the concept of population health.

To identify a working definition of population health, several PHIs brought a group of stakeholders together from health care and public health to operationalize the concept of population health and ensure it resonates with health leaders.

Although interviewees defined population health in many different ways, the majority of definitions included the following two main characteristics:

- Focused on determinants of health (specifically addresses determinants that affect disparities and contribute to inequities).
- Focused on populations beyond patients (large community or specific demographic group(s).

Additionally, several interviewees mentioned that they used a place-based or geographic definition of population health. The use of this characteristic varied across the interviewees — with several interviewees primarily defining population health through geographic lenses, while others, including representatives of two health systems, reported using this characteristic in combination with either one or both characteristics described above. Moreover, one interviewee noted the definition of population health used by their organization included population health management (clinical strategies for improving health). The interviewee indicated that this approach had been helpful in advancing efforts in population health by building on their existing clinical portfolio of work. On the other hand, one organization noted that their definition specifically excluded the concept of population health management.

The interviewees also were asked to provide insights on how the hospitals and health systems they worked with define population health. The majority of interviewees, including representatives of two health systems, noted that the definition of population health varied among hospitals/health systems. However, hospitals/health systems they worked with primarily defined population health through clinical lenses as population health management which often was interpreted as coordination of care versus working upstream to address the determinants of health. Specifically, hospitals focused on “attributed population,” “frequent flyers,” “individuals that came through their doors” and those “who cost system a lot.” Some of the respondents indicated that this view of population health was shaped by the fee-for-service system. In the meantime, several interviewees suggested that a few hospitals they worked with “were trying to have a more strategic approach to population health.” That said, hospitals had different comfort levels with population health work — with some hospitals engaging in population health on their own while others felt they were not well-positioned to implement activities in this area without community partners such as health departments. However, the interviewees also noted that “most of the health systems were not there (ready to engage in population health) yet.” On the other hand, several interviewees suggested that the “space was rapidly changing” and a shift in

the health care landscape was occurring with more hospitals expressing interest in addressing determinants of health.

The interviewees identified several main challenges with using the term population health:

- A great degree of variability with respect to how hospitals defined population health. Furthermore, even when hospitals used similar definitions of population heath, they usually engaged in different activities (from clinical to population health efforts). For example, one interview said that "there are still some hospitals out there who when they think about community benefit or population health they still think of it as delivery of health services."
- The interviewees believed that these issues often resulted in confusion and prompted interviewees to use the term "community health" versus "population health" as "community health" term was often associated with addressing issues in the community.
- The interpretation of the population health term by the health care community in the context of population health management. As one interviewee noted, "population health is a challenging term because it feels like just another term that is close to some of the other terms that they've heard."
- The historical focus of hospitals/health system on treating individuals vs. working at the population level. Moving beyond patient population would require a profound cultural shift. According to one interviewee: "Focusing on populations beyond patients … will make hospital feel nervous like they are suddenly going to be on the hook even if a large portion of people are not coming into their walls."
- "Generation gap." It was noted that hospital leadership tended to be older and was more likely to perceive population health as "the next generation problem."

In order to help hospitals interpret the term population health from the public health perspective, the interviewees used a narrative with some of the words described below ("determinants of health" was referenced as being the most commonly used phrase):

- Concept of place-based population health.
- Community Health Needs Assessments.
- Improving health outcomes of a community.
- Health equity and disparities.
    - Nonmedical determinants, including going beyond clinical and medical care.

- Root causes.
- Social determinants of health, including
    - Connection between determinants and health,
    - Examples of determinants of health (e.g. transportation, housing), and
    - County Health Rankings (CHR) model.
- Upstream issues.
- Linkage between population health management and work in the community (e.g., link population health strategies for addressing homelessness with addressing housing needs in the community).
- Shared accountability.
- Triple Aim to Quadruple Aim, meaning
    - Improving the patient experience of care (including quality and satisfaction),
    - Improving the health of populations,
    - Reducing the per-capita cost of health care, and
    - Improving the work life of health care providers, including clinicians and staff.

Conclusion

According to the literature review and key informant interviews, population health is a widespread term across both the public health and health care fields. Despite a widespread adoption of the term, there is no consensus on the definition of population health and differing terminologies across sectors has added further confusion. While all organizations use the term to emphasize a focus on populations of interest, the perspectives on population health differ. From the public health perspective, population health is meant to understand the relationship of health outcomes with determinants and policies. In the clinical care perspective, however, population health is meant as a management tool to address health related issues and costs in specific patient populations.

The literature review indicated that a definition proposed by Kindig and Stoddart emphasizes that population health focuses the health outcomes of the population as a whole in a particular geographic area or specific population groups (e.g., persons with disabilities) and concerns with the interactions of determinants of health with health outcomes.[40] The focus of this work is to create an approach that better addresses the health of the population by working to identify issues and address the determinants that contribute to these outcomes across a variety of sources.

Clinical adoption of the term population health as a shorthand for population health management has led to a narrower focus on clinical populations, with an emphasis on management of the health conditions of particular clinical populations (e.g., diabetic patients) and cost reductions in health care.[41,42]

As the term "population health" has popularized, more emphasis has been placed on using the term and distinguishing "population health" from "population health management." To this end, the AHA has created their own definition of "population health," which captures both "population health management" and addressing social determinants of health in the community (community health).[43]

This approach to population health maintains the clinical focus of the AHA in more explicit terms but also addresses the non-clinical approach to health beyond the patient level that was identified by Kindig.[44,45] The usage by the AHA, places "population health management" as part of a larger population health approach but should not be considered the whole of population health.

The framework from AHA explicitly places clinical and community work under the umbrella of a larger "population health" approach — "*population health" relates to both clinical population and whole population health outcomes improved by the integration of public health and clinical interventions.*

The perspectives of the interviewees aligned with the findings from the literature review. The respondents pointed out that the use of the term population health differed among hospitals and health systems. In general, they agreed that hospitals/health systems thought of population health from a clinical perspective, focusing on "frequent flyers" and their "attributed population." In the meantime, the respondents acknowledged changes in the health care landscape with more hospitals and health system exploring population health related opportunities. Furthermore, several interviewees indicated that their organization had a working definition of population health; while others didn't have a specific definition but rather operated under a common vision. The majority of definitions of population health incorporated elements of Kindig and Stoddart's definition. Specifically, the interviewees noted that they were using "geographic boundaries to define a community." Only one interviewee related their definition of population health echoed the approach by AHA and incorporated "population health management" in their definition of population health. Based on the literature review and interviews, it is important to

note that no matter the definition that is used, the most important element of the population health perspective is the emphasis on addressing upstream contributors to health outcomes.

Benefits of Addressing Population Health

Based on Literature Review and All Interviews

Findings	Recommendations
• Hospitals may view population health as a key component of their organizational mission — part of what their community expects. • Hospitals can meet community benefit requirements by engaging in population health efforts. • Population health is a key component to achieving the Triple Aim. • Population health efforts allow hospitals/health systems to better understand (e.g., access to food, transportation) and serve their communities. • Health care innovation (Accountable Care Organizations [ACOs], Centers for Medicare and Medicaid Services (CMS) Accountable Health Communities models and other opportunities for the CMS innovation grant) and health reform will likely support population health efforts into the future. • Population health work helps hospitals to build stronger relationship with organizations in the community.	Hospitals and organizations interested in supporting hospitals in population health work could consider: • Supporting and encouraging collaboration around population health activities among hospitals/health systems, public health agencies and communities. • Building understanding and knowledge of value-based and other alternatives to fee-for-service health care payment models. • Developing a communication strategy — that may include a standard set of slides — to increase awareness of the variety of innovative payment models for population health activities. • Identifying strategies for capturing and evaluating benefits related to implementing population health efforts.

What We Learned from Literature

Health systems and population health specialists are working to capture the financial and other benefits to hospitals and health systems when they implement population health activities. Benefits to hospitals and health systems will increase as health reform moves toward value-based, rather than volume-based, care and payment strategies. Population health currently benefits hospitals because it is viewed as “the right thing to do” and is often a key piece of fulfilling their organizational mission to benefit their communities. Also, population health can be a mechanism for achieving the Triple Aim. Population health also can allow hospitals to better understand the context in which their patients live and subsequently better serve them. Finally,

population health activities are a sign of a hospital moving toward innovation and the future of health care delivery in the United States.

Mission & Marketing

Population health work is often seen by hospital leadership as the "right thing to do" or as a key component of fulfilling the mission of a hospital.[46; 47] Historically, activities similar to population health have been included within the portfolio of required community benefit work. Community benefit work has previously been commonly hosted in marketing departments, although activities do not count toward meeting community benefit obligations if they are primarily a marketing activity.[48]

Hospitals with 501(c)(3) tax status are required to report their community benefit activities to the IRS by completing the Form 990 Schedule H. To further encourage hospitals to engage in population health, literature discusses how the IRS requirements could be expanded to include reporting on population health outcome measures, in addition to the current input-based information such as dollars spent.[49] These changes to the community benefit regulations could encourage spending on evidence-based activities for improving population health outcomes, such as investments in the social determinants of health. Currently, some states have this or other requirements for community benefit reporting, beyond what is captured by the federal Form 990 Schedule H.[50]

Population health activities might be a key feature by which hospitals distinguish themselves from competing organizations. Literature discusses population health efforts as challenging for hospitals who only have a limited market share in their geographic or metropolitan area.[51] When a hospital has a limited market share, population health investments in the community from one health system may equally benefit their competitor financially.[52] If a hospital is truly being reimbursed for value of care, rather than volume, the hospital likely is making significant investments in community health and infrastructure. If a competing hospital is also in value-based contracts, they may also benefit from the community health investments made by the first hospital. This contributes to the case for collaborating on population health work. But also, population health has been described as a potential strategy for some hospitals to differentiate themselves via their community investments from other systems in the market.[53] From this perspective, population health work is seen as the "right thing to do," and there is a belief that health care consumers will reward hospitals with their business for this community approach to health.

Achieve the Triple Aim

In addition to being a marketing and mission-fulfillment strategy, population health work is also a key component in achieving the Triple Aim. The health care Triple Aim first was described by the Institute for Healthcare Improvement as, "(1) improving the patient experience of care; (2) improving the health of populations, and; (3) reducing per capita costs of health care."[54] A health system working on population health is directly responsive to the second item on the Triple Aim — improving the health of populations. Population health makes upstream investments in health and the community to ensure that the population served by the health system stays well. Population health activities can help move the needle on the other two components of the Triple Aim as well. For example, decreasing avoidable hospital readmissions is a key indicator for population health. Decreasing avoidable hospital readmissions means that the community and social environment that a patient was discharged into is health supporting. As hospitalization is expensive, reducing avoidable hospital readmissions is key in decreasing the cost of care. Further, preventing avoidable readmissions means that a patient experienced better quality of life and were able to remain in their home instead of an inpatient setting, and this improved quality of life also functions to improve patient experience of care.[55]

Throughout the literature there are several examples of hospitals making strides toward the Triple Aim via population health strategies. These successful efforts have included examples of substantial reductions to readmission rates.[56] While there are clear financial benefits to hospitals for reducing penalties related to this measure, the literature also recommends caution when reallocating resources to be sure that patient quality of care, safety and satisfaction are not at risk.[57]

Literature suggests that there are benefits to population health — a key component of the Triple Aim — when there is financing for and coordination between public health, health care and social services.[58] The literature states that there are community-wide benefits, including benefits to hospitals and health systems, when there is multisector engagement in health planning, implementation and evaluation, as proposed by population health.[59] An example of an opportunity for multisector engagement in health planning and implementation is when a hospital conducts its Community Health Needs Assessment (CHNA). CHNA is a key activity for achieving improved population health and the Triple Aim.[60] CHNAs are a required component for nonprofit hospitals to maintain their tax exempt, 501(c)(3) status. This assessment includes working with key partners and stakeholders to identify community health priorities. Hospitals are also required to develop community health improvement plans to address the population health

priorities identified in the CHNA process. Quality measures, in the academic literature, associated with CHNAs include elements such as robust partner and stakeholder engagement, examination of data, root cause analysis, consideration of local context, consideration of social determinants of health, implementation of evidence-based strategies, evaluation, sustainability and feasibility.[61] Implementing CHNA quality measures also could benefit a health system overall. For example, meaningful stakeholder engagement builds trust and a relationship between the hospital and the community it strives to serve. Examination of data can make for more precise and efficient delivery of services. For instance, activities such as hotspot mapping of community health outcomes could allow clinicians the opportunity to better understand the community and social context into which they are discharging patients.

Understanding Patient/Community Context

Evidence-based delivery of population health activities allows health systems to better understand the context in which their patients/community live and subsequently better serve them. Population health work recognizes the many factors impacting the health of a community and the patients in that community that the health system regularly interacts with. The health of a community is determined by many factors, such as the economy, housing and transportation. So, population health encourages a variety of entities, such as economic development councils, housing agencies and departments of transportation, to work together. The population health approach recognizes the increased effectiveness of interventions when paired with other services. Examples of this from the literature include, capturing body mass index in clinical visits, while also working at the community-level to recruit outlets to offer fresh, affordable produce in low-income neighborhoods.[62] Population health recognizes that the best approach for community and patient health is likely a combination of clinical- and community-based approaches.

Population health allows health systems to better understand the root cause of intractable health issues and the variety of forces impacting the issue. One example of this from Minnesota was a five-county area where local health departments and hospitals jointly funded collection of behavioral risk factor data that previously were unavailable.[63] This investment in data collection allowed the collaborative to identify an unusually high rate of smoking in pregnant women. Then, provider data was used to identify zip codes with higher smoking rates to understand which communities potentially could benefit the most from concentrated outreach and other interventions. Ultimately, this data collection laid the groundwork for a large health equity data analysis project in the community to identify and respond to key issues on an ongoing basis.[64]

This population health strategy allowed for an emerging health issue to be identified and responded to with both clinical and public health strategies, and ultimately, established a mechanism by which issues similar to this can be identified and addressed going forward.

In addition to better understanding patient needs, population health strategies, such as multisector investments in resources like parks, libraries and others, can improve health outcomes at the population-level.[65] Literature suggests that zip code, or where an individual lives, may be a more useful predictor of health than an individual's genetic code.[66] This suggests that the greatest opportunity for improving health outcomes for patients and for the broader community is in making population health investments where community-members live, learn, work and play. A multi-sector population health approach can help identify and focus on addressing the needs of populations. beyond and including patients with specific diseases. These populations can be geographically defined (e.g., zip code, city) or they may share some characteristics such as being elderly, low-income or a racial/ethnic minority group.[67] Addressing these priorities means that hospitals have a better understanding of the outcomes which might determine their reimbursement, under value-based models. Population health recognizes and provides strategies to address health outcomes that are driven by a complex combination of social, economic, personal and clinical factors.[68]

Health Reform & Financing

Federal health reform such as the Patient Protection and Affordable Care Act (ACA) is a major driver of health system engagement in population health. A stated aim of federal health reform is to create an environment in which hospitals and physicians are rewarded for delivering high-quality, high-value health care and through strategies such as population health.[69] As health care reform and innovation, in a variety of iterations, are implemented, it is anticipated that population health will increasingly be incentivized as a strategy to both improve patient care and to control health care cost.[70]

While it is expected that future health reform will further incentivize health system engagement in population health, there are several current mechanisms that financially encourage health systems to take a population health approach. Health systems may be interested to engage in population health-supporting models, because there is an expectation that traditional, fee-for-service reimbursement will decline.[71] Current models or mechanisms that support the health care system to engage in population health are Accountable Care Organizations (ACOs), CMS Accountable Health Communities models and other opportunities for CMS innovation grants.

Along this line, some health systems currently make significant investments in population health because they have found a business case to do so. Literature suggests that these businesses cases may be shaped by their organizational mission, marketplace changes, payment reform and partner expectations.[72]

What KHI Learned from Stakeholders

A total of 14 interviews were conducted, including 11 PHIs, representatives of two health systems and one university. In general, the findings present a summary of perspectives on each issue. With the majority of interviewees being PHIs, the summary of key informant interviews is likely to reflect primarily the perspectives of PHIs. However, when representatives of health systems provided different responses than the rest of interviewees, their perspectives are noted separately.

Several respondents noted that there are several incentives and potential benefits that hospitals can achieve by implementing population health efforts. In general, the interviewees listed the following incentives for engaging in population health work:

- Opportunity to save money as part of an Accountable Care Organization (ACO).
- Shift of the reimbursement structure from volume-based to value-based.
- Leveraging population health work to fulfill the role of the hospital as an anchor institution and major employer and procurer of resources.
- Peer pressure. “The main part is financial but after that it is how they are going to look to those in the community …”
- Use of population health data by hospitals to understand its population.
- Integration of Community Health Workers (CHW) to support social needs of patients.
- Development of trust between hospitals.
- Collaborative development and implementation of strategies.

In the meantime, the respondents, including a representative of a health system, suggested that “the bottom line” is still the strongest driver behind the interest in population health efforts by many hospitals. However, the “bottom line” also was perceived as a potential barrier. According to a representative of one of the health systems, “… so many people were doing amazing work and then when the bottom line suffered because of whatever was going on in their community, they had to shrink some of the work they are doing. So the mission and the commitment is

wonderful but we are seeing that happen with organizations around the nation. You can be as visionary as you want but if your board is looking at your financials you may end up doing less."

Furthermore, the health systems representatives highlighted several additional drivers, including readmission penalties, payment structures, findings from the data and community input and having a leader/champion within their organization. One of the two health system representatives indicated that readmission penalties were a burden to them. In contrast, another interviewee thought that the current readmission penalties were not very severe or strong enough to create a real reaction or change.

Several interviewees emphasized that internal drivers (e.g., a visionary hospital leader) can play a larger role than external drivers in moving hospitals along the population health continuum. Furthermore, the respondents noted that public health colleagues should refrain from using the "moral imperative" on its own as it might be not enough to stimulate hospitals' interest in population health.

Conclusion

Across literature and stakeholder interviews, some existing and emerging benefits to hospitals from population health activities were discussed. Existing benefits include the opportunity for cost-saving in some cases, for building trust and relationships with the community and other hospitals, and the opportunity to use population health data and other strategies to understand and subsequently better serve patients. Readmission penalties and the "bottom line" were cited as key drivers for engaging in population health. However, in instances when the "bottom line" was negatively affected by events in the community, hospitals had to scale down their population health efforts. Furthermore, hospitals have benefited by their population health work because many — often including those in hospital leadership — consider population health to be a key part of their work as a mission-driven organization. Emerging benefits may include significant financial incentives provided by emerging models of reimbursement and care. Health care innovation and reform are expected to provide increasing financial and evidentiary support to population health efforts into the future.

Barriers to Addressing Population Health

Based on Literature Review and All Interviews

Findings	Recommendations
• There are various definitions and understandings of population health which can be a barrier to consistent progress implementing population health activities. • Community-focused population health represents a new area of work for hospitals who may or may not have the staff expertise to support the work. • Currently, hospitals experience challenges with capturing the return on investment for population health activities.	Hospitals and organizations interested in supporting hospitals in population health work could consider: • Developing a communication strategy — that may include a standard set of slides — that provides an overview of potential barriers for engaging in population health and solutions (e.g., highlight payment models utilized by states). • Establishing a process to continuously identify, capture and share examples of innovative funding models for financing population health activities. • Creating opportunities for leaders — with experience taking on complex issues such as the social determinants of health — to share population health lessons with those seeking to effect change.

Capturing Return on Investment

A significant barrier for hospitals in the advancement of population health activities is the complex mechanisms by which the financial success of population health activities can be captured. Capturing the financial viability of population health is key for making a business case for population health. It is also key to measure population health outcomes and set reasonable timeframes along which financial returns or health outcomes can be expected.

Hospitals might undertake population health work because it is “the right thing to do” as a key component of their organizational mission to serve the health of their community. However, some literature suggests that there is a business case for taking on population health work as well.[73] Some consider population health activities a mechanism by which care quality metrics such as emergency department utilization and readmissions can be improved, and hospitals might consider improvements in these metrics as part of the return on investment from population health activities. However, there is some pushback to considering emergency room

utilization as a metric to capture the value of population health activities. Emergency departments are an expensive setting in which to access health care, but it might be perceived to be less expensive, more accessible and of a higher quality than a less-intensive care setting by some low-socioeconomic status individuals.[74] Primarily accessing health services via an emergency department decreases the likelihood that these individuals will receive the preventive health care services delivered in a primary care setting. Population health seeks to address social determinants of health while emergency room utilization might be more influenced by perceived quality of care and accessibility.[75] In order for decreased emergency room utilization to be considered an opportunity for a return on investment on population health activities, the factors regarding perceived quality and convenience of emergency department care would need to be addressed at a community level.

Another metric discussed in literature to capture the financial and patient-care value of population health is a reduction in hospital readmissions.[76] A barrier to assessing the appropriateness of this metric is that successful efforts to reduce hospital readmissions have largely been among small or pilot populations or programs that have had only short-term funding, so the overall sustainability of these efforts is not clear.[77] Additionally, work around reduction of hospital readmissions thus far has primarily entailed care coordination or population health management approaches, rather than a comprehensive population health approach that includes a community health investment. Capturing a true return on investment for population health from reducing hospital readmissions would require implementing a community health approach in addition to the more common population health management approach. This approach would likely include connecting to and investing in the capacity of community-based organizations to meet the social needs of individuals and making other investments in the community to ensure a health-supporting context for all members of the community. Broadening readmission reduction programs to include community organizations, ambulatory care and post-acute care could also allow for financial risk and reward to be shared across relevant organizations.[78]

Another challenge regarding capturing a return on investment for population health is the timeline of return. When public health or community-based organizations address population health, their work typically focuses on improving conditions or determinants of health in a community. If health care organizations are supporting these efforts financially, they might expect short-term changes to their costs or other outcomes that might not align with the expected return for interventions prioritized by the community or community-based

organizations.[79] Successful population health activities will need to include communication between health systems and the community about the specific outcome that is expected to improve and the timeline on which change to that outcome may be seen.

Measuring what matters, in regard to population health, is an ongoing challenge and is connected to the overall success of the work. Measuring what matters means having identified health outcomes as well as financial inputs and savings. For population health to merit an ongoing investment from health care funders (e.g., health systems, accountable care organizations, health insurers, federal/state agencies), agreed-upon metrics, measurement methods and timeline of capturing improvement need consensus.

Hospital & Location Characteristics

Barriers to health system engagement in population health might be shaped by characteristics of each health system and by the local environment in which the health system is located. Key characteristics of health systems include leadership buy-in to population health work, the historical relationship with the community, and the capacity and interest of the health system to innovate.

State-Based Health Reform

The dialogue around population health work within health systems has been supported by the widespread idea that health reform has and will continue to contribute to the momentum and financial support of population health work. With that in mind, many components of health reform vary state by state. Variations between states can include Medicaid expansion, Medicaid waivers and other innovation opportunities from federal payers. Medicaid waivers or innovation grants allow health systems to take on innovative reimbursement contracts. Examples of programs that allow for this innovation include the CMS program called Accountable Health Communities. Innovative contracts might allow the hospital to address social determinants of health or to pilot value-based reimbursement through up-side risk contracts. States that have capitalized on these federal funding opportunities may have more flexibility in funding to innovate in population health.[80] Alternatively, states or areas that do not have innovation waivers or grants may experience barriers — such as lack of funding — for implementing population health activities.

History of Cross-Sector Work

Hospitals and health systems vary widely and health systems currently working in population health might have a few unique characteristics. These health systems may have a history of innovation, a cross-sector approach to their work, experience utilizing data on population-level health outcomes and a commitment to evaluation.[81] Another key characteristic of health systems currently engaging in population health work is buy-in from health system leadership in the value of population health.[82] Previous, successful experiences implementing integrated care models, such as Patient Centered Medical Homes, are an example of the history of innovation that can prepare health systems and their partners for successful population health work. This history may build trust and confidence between clinical and community providers in their ability to successfully collaborate to deliver high-quality services.[83] A barrier to the successful initiation of population health work may be the absence of this collaborative history, as trusting relationships with community partners are critical for effectively addressing the social determinants of health in a community. Another health system characteristic that might be a consideration as to whether population health activities are implemented is the type of hospital. For example, safety net hospitals are more likely to have high readmission rates, given the high-level of needs related to the social determinants of health in their patient base.[84] This could be a barrier to population health work as this means that safety-net hospitals are more likely to be receiving the maximum penalty from the Hospital Readmissions Reduction Program (HRRP) established by the Affordable Care Act.[85] This hurts the financial situation of the hospital, but if the hospital views population health work as a strategy to reduce readmissions, it could serve as a driver for engaging in this work. Safety net hospitals may hesitate to take a population health approach to address social determinants of health because the scale of need might feel too large to meaningfully address. It is certainly possible for safety net hospitals to successfully take on population health work as they often have a long history of collaboration with community-based partners and resources, but there may be barriers specific to safety-net — or other types of hospitals — that impact their uptake of population health activities. [86]

Market Share

An additional health system characteristic that may shape their success in population health implementation is market share or the portion of the community that utilizes their services. Having a high market share — or a majority of individuals in a community utilizing their services — may contribute to the success of a health system in this work. In a crowded market with a lot of health systems for individuals to choose from, a health system may not experience the same

community pressure to address population health.[87] Further, in a shared market, one health system investing in population health might equally benefit a competing health system. If one health system makes investments in the capacity of community-based organizations or in community infrastructure with the expectation of seeing a financial return from improved population-level health outcomes, other hospitals serving the same area would realize the same improvement in the population-level health outcomes of their community, without having made the same investment. However, researchers have also noted population health work and specifically community investment as an opportunity for a hospital to differentiate itself from competing health systems in an area with multiple large health systems.[88]

Uncertainty in the Future

Although there have been pilot programs that have demonstrated success in population health approaches, there is not yet a clear and comprehensive commitment to reimburse health systems for addressing the social determinants of health from health payers. Another barrier to health system engagement in population health is uncertainty regarding the way forward for health care providers and health systems in population health work. This uncertainty includes concerns about health system expertise and resources to engage in this work, and also about what exactly population health will mean for health systems going forward. This uncertainty is a real barrier, but it is difficult to determine the extent to which uncertainty about the future affects the current uptake and implementation of population health activities. Health care in the United States is changing and it seems that population health is a key part of the future of health care deliver, but how this future will unfold is unclear.

A key component of this future is value-based reimbursement in health care. Providers, specifically, might find the path forward in population health work, toward value-based reimbursement uncertain. Specifically, one study found that, “proposals for collaborative care that feature patients and providers sharing decision making, controls, and financial incentives often are perceived as threatening, particularly by physicians and other health professionals.”[89] At least one study found that the current capacity of value-based reimbursement to support meaningful population health investment is not clear.[90] This contributes to the sense of uncertainty about population health. Additionally, though many point to changes — such as new standards for community benefit reporting and readmission penalties — as evidence of health care shifting toward a population health approach, some view these changes as insignificant to meaningfully shift the focus of a hospital.[91] These sources of uncertainty can make the precise future of health care in the United States unclear.

Resources & Scale

A significant challenge associated with population health work is the scale on which these activities occur. Working to improve the health of the population living in a geographic area is not a small task. It might require additional financial resources as well as new staffing or partnerships for health systems.

Additional financial resources for population health may come from a realignment of current resources, such as community benefit dollars, a return on investments in population health or from collaboration with community and governmental public health organizations.[92] Funds will be needed to address social determinants of health such as housing, food, transportation, education and employment components.[93] Funds needed for population health infrastructure investments likely will be even greater in low-income, minority and rural communities where the existing needs might be greater. Community investments in low-income, minority or rural communities may be necessary to address inequities in population health.[94]

To solicit additional funds for population health from health systems or payers, business plans that include realistic, multi-year periods to capture a return on investment will be required.[95] These funds likely will need to come from hospital community benefit spending, shared savings agreements, federal prevention funds and other investors in community development.[96] Shared savings agreements are contracts under which health systems can innovate to keep populations healthier for less money, perhaps by making upstream investments in health before individuals are sick, and keep a portion of the amount saved. Community benefit dollars are another potential mechanism for population health investment. One note of scale on the current levels of community benefit spending is that little difference exists between nonprofit and for-profit health systems in community benefit.[97] Currently community benefit dollars are largely devoted to patient care services, so there could be an opportunity for community benefit dollars to be spent on more upstream determinants of health.[98] As with any investment, putting dollars toward population health efforts might mean that fewer dollars are available to fund historic practices that may have recognized value or community expectation.[99] Some hospitals, such as safety net or critical access hospitals, may operate on thin margins and might not have internal resources to invest in health care innovations such as population health. This means that population health activities likely will be shaped by the willingness of health care payers to support these activities financially.

In addition to financial resources, population health work requires human resources that may or may not be available to hospitals. Adequate human resources means having staff available to take on population health work and that the staff available to do this work have the necessary expertise. Currently, hospitals likely do not have the appropriate or adequate staff to identify evidence-based strategies to address needs related to the social determinants of health while considering local collaboration and underlying causes.[100] To make these human resource investments, hospitals will have to strike a balance between clinical services and population health goals.[101] Part of this human capital investment may include hiring a population health specialist and building understanding in the health care system about the long-term commitment required for population health improvement.[102] Some have suggested that a broader perspective that includes population health needs to be added to physician and other health care provider training to recognize the nonclinical components of health outcomes.[103]

In addition to health system staff resources, community partnerships are another key piece of population health work that health systems might not currently have. The IRS Community Health Needs Assessment (CHNA) requirements sought to promote this but might have been insufficient.[104] IRS CHNA requires hospitals to incorporate input from stakeholders including those with public health expertise and representatives of underserved, low-income and minority populations in their community.[105] As the social determinants of health — such as housing, transportation, food access and economic development — illustrate, health and the social issues frequently addressed by community-based organizations are complex. For this reason, one-off attempts by organizations to change health issues are typically not successful.[106] These efforts may fail due to inadequate resources and may address only symptoms rather than the root causes of these highly complex issues.[107] While needed for successful population health work, cross-sector approaches to change can mean that there are varying expectations and strategies, which can be a barrier or a support to the work.[108]

Change is Hard

Another barrier to population health work is that the things that need to change for improved population health outcomes can be very resistant to change. When population health outcomes are discussed, lifestyle — a collection of behaviors — are discussed as major contributors. The drivers of behaviors are complex and hard to change.[109]

Behaviors are often influenced by things such as income, gender, race and social groups. At the root of these influences are things such as income inequality, sexism, racism and social

isolation. Additionally, while recognizing these things as common challenges to behavior or lifestyle change, these challenges are not the same across all community members with needs.[110]

For instance, a major driver of clinical outcomes between patients of similar income, sex, race and neighborhoods is social support and the availability of a social network to provide emotional and other support.[111] Often, community members with low socioeconomic status make choices that can be hard for those from different circumstances to understand. However, those choices often are rational responses to the stresses and conditions under which their choice was made.[112] A barrier to population health is the difficulty of the work, such as behavior change, that it includes.

What KHI Learned from Stakeholders

A total of 14 interviews were conducted, including 11 PHIs, representatives of two health systems and one university. In general, the findings present a summary of perspectives on each issue. With the majority of interviewees being PHIs, the summary of key informant interviews is likely to reflect primarily perspectives of the PHIs. However, when representatives of health systems provided different responses than the rest of interviewees, their perspectives are noted separately.

Several interviewees noted that hospitals realize that the "train has left the station" and the transition to value-based care is underway regardless of what would happen at the federal level. However, these changes pose a number of challenges and barriers to hospitals and health systems the interviewees have been working with. Specifically, a representative of one of the health systems noted that a lack of consolidated strategy across all payers and particularly with Medicaid may pose a challenge. Another representative of a health system suggested that confusion over population health terminology and in some cases different priorities (e.g., saving money versus improving health) could also create some barriers to advancing population health.

The following challenges were referenced by the respondents:

- **Reimbursement structure:** The reimbursement structure for working on social determinants of health is not mature nor widely understood. Historically, hospitals have been paid for treatment and not prevention. "Overall, health systems and hospitals are struggling with the system that is set up to care for people who are sick, so finding ways to shift is hard." The transition to value-based system has been slow.

- **Complex issue:** Population health is a complex topic and many hospitals struggle with understanding what it means.
- **Outside of their role:** Many hospitals feel that addressing root causes of poor health outcomes is not within their control or influence.
- **Training**: Health care providers received a different type of training. Work in population health requires additional competencies that health care providers may not fully possess.
- **Data sharing:** Hospitals have concerns about sharing their data.
- **Resources:** Some hospitals are in "deep financial trouble." Some hospitals might think that they "don't have enough margin to invest in the kinds of resources needed to do real population health work."
- **Collaboration**: Many hospitals are not sure how to choose appropriate partners and create partnerships. Some communities might not have capacity to support partnerships that address social needs.
- **IRS Requirements:** Some hospitals are too focused on meeting IRS requirements. However, they often are "less clear about or committed to the intent behind those requirements."
- **Conservative states**: In general, conservative states might have a tendency to emphasize the personal responsibility of individuals and their behavioral choices, rather than the role of social and built environment on health, which in turn affects policymaking.

The respondents proposed some solutions related to the challenges identified above. For example, one respondent suggested that by collaborating with their communities, hospitals can address population health priorities while staying within their available resources. Another respondent suggested to "collectively be a lot more strategic about involving Medicaid managed care and other health plans more actively."

Conclusion

There are challenges related to hospital engagement in population health, as it might represent a departure from the status quo. Community-focused population health represents a new area of work for hospitals who may or may not have the staff expertise to support the work. Some hospitals with a history of innovation or cross-sector collaboration may be better prepared to take on population health work than hospitals without this experience and history. However, the

lack of innovative payment mechanism and funding structure poses as a barrier for population health investment. There are also various definitions and understandings of population health which can be a barrier to consistent progress implementing population health activities. Further, the determinants of health that population health seeks to address are hard to change. Lastly, health systems currently struggle to capture the return on investment for population health activities.

Existing Support Systems

Based on Literature Review and All Interviews

Findings	Recommendations
• The Patient Protection and Affordable Care Act (ACA) laid the foundation for enhancing prevention and health promotion measures within the health care delivery system. • New reimbursement models have begun incentivizing investments in population health management and community health efforts. • Investments in population health may help hospitals set themselves apart in a competitive health care environment. • The administrative structures of local health departments, community-based organizations and others can support hospitals and health systems engagement in population health.	Hospitals and organizations interested in supporting hospitals in population health work could consider: • Providing concrete, evidence-based interventions that fit into the current payment-driven framework of the health care sector in its demonstration of cost-effectiveness and quality. • Continuing dialogue with health care leadership about the role of population health in their sector.

Health Reform

Reform in health care, broadly speaking, has provided incentive for a health system's engagement with population health. A specific example of this is the Patient Protection and Affordable Care Act (ACA), federal health policy reform implemented by the Obama administration. The ACA sought to change the way health care is delivered to improve health and reduce the growth of health care costs.[113] A primary strategy for improving patient care and outcomes while reducing growth of costs was to create policy that supports value-based payment that requires attention to population health and integrated partnerships across sectors.[114] A few additional examples of health reforms that are supportive to population health work by health care providers include innovation by CMS, such as Medicare Advantage, CPC+ (Comprehensive Primary Care Plus) and Medicare Shared Savings Programs.[115] Other reforms include changes to IRS Form 990 reporting for nonprofit hospitals to include a Schedule H with articulated community benefit from the hospital.[116] Although the IRS requirement doesn't require community benefit dollars to be spent on population health activities, it could prompt hospitals to think differently about their community benefit dollars and more explicitly invest in population

health activities. Further community benefit support for population health is demonstrated by examples of state specific regulations for community benefit reporting. Since 2012, Maryland has required hospitals to track and address health disparities as a specific requirement within their community benefit reporting.[117]

Addressing disparity in health outcomes often is discussed as a key component of population health.[118] An additional component of health reform potentially supportive to population health work, is the Hospital Readmission Reduction Program (HRRP). This is a component of the ACA that ties payments to readmission rates, including penalties for exceeding the national benchmark for Medicare patients.[119] Readmission is seen as a key outcome to measure related to population health because successful discharge planning, to prevent avoidable readmissions, connects patients to key community and social supports to improve their quality of life and health outcomes. Discharge planning can be a population health activity because it requires hospitals to partner with and invest in community-based services and resources. Hospitals can be penalized a maximum of 3 percent of their regular Medicare payments if they fail to meet the performance standard in this key metric.[120] While this and other examples of health reform have financial penalties for noncompliance, it has been suggested that these penalties are currently insufficient as they may be less expensive than the investment required to improve population health or may be offset by the revenue possible from inpatient payment.[121] Nevertheless, this is an example of health reform in support of population health engagement from the health system.

New & Innovative Reimbursement Mechanisms

Financial drivers are and will continue to be important structures to encourage health care sector work in population health. Current funding or reimbursement mechanisms in support of this are frequently innovation, demonstration or pilot projects. In the coming years, it is expected that more consistent and widespread opportunities for health care reimbursement for population health will come about. The driving force for this projected and ongoing change is the shift from fee-for-service to value-based reimbursement for health care in the United States.[122] As mentioned previously, a current mechanism for incentivizing population health investment is penalties for adverse outcomes such as avoidable hospital readmissions.

In addition to financial penalties, alternative financial arrangements include those established through accountable care organizations (ACOs), advanced primary care medical home models and bundled payment for episodes of care.[123] ACOs are another example of a relatively new

payment innovation that can support a population health approach to health care. ACOs assume financial risk for a defined patient population with accountability that extends beyond clinical care.[124] An ACO is responsible for the cost of care, whether or not they provide it, and are frequently sponsored by health systems or provider groups.[125, 126] Literature suggests that mature ACOs, in particular, are beginning to incorporate non-clinical partners into their care teams to address social and community-based needs as a population health approach would recommend.[127] Other innovations include demonstration projects to serve individuals dually eligible for Medicare and Medicaid services.[128] Medicare and Medicaid participation in health system payment innovation in support of population health is key as the United States government is a large-scale payer for health services.

Ultimately, financial interests shape the scale, scope and duration of the investment in population health by a health system.[129] Hospitals are navigating the waters of new and innovative reimbursement practices and are beginning to take ownership of the concept that community and social factors have a large impact on the health outcomes that the health system is being paid to address.[130] While some mechanisms exist to support reimbursement for population health activities there is more that can be done to improve the capacity of a health system to carry risk regarding the health outcomes of their populations and to increase opportunities for populations to benefit from community investments.[131]

Supportive Health System Practices

Some of the reimbursement innovations discussed above are tied to new models of care or practices that are new to the health care sector. One example of an activity that may be new to health care is the utilization of public health data to inform clinical priorities and strategic planning.[132] Integrating this data with electronic health records also being collected could not only allow for an improvement in the quality of care delivered, but also it could allow health systems to more easily identify the highest priority needs in their population in which they could invest.[133]

Other opportunities for new or expanded practices by health systems include expanded community partnerships, particularly with their local public health agencies.[134] Partnering with public health can give health systems access to a knowledgeable convener on population health issues with existing community partnership and data access and expertise.[135] As governmental public health is organized geographically, they can coordinate joint implementation of population health efforts across health systems serving a community.[136]

There are also examples of health systems or health entities that have taken ownership for a more holistic sense of well-being of their patients. These health systems can be looked at as examples for other entities to learn from as they move into population health work as lessons can be learned from their experience. The U.S. Veterans Administration is an example of a health care organization that has explicit responsibility for determinants of health for its population. For example, the VA provides health care and also supports the cost of education for its population, one of the key social determinants of health.[137] Other health care delivery models that can be supportive of overall population health include patient-centered medical homes and advanced primary care.[138; 139] These models of care connect health care outcomes, more explicitly than traditional care, with the conditions in which a patient lives, learns, works or plays.[140]

Hospital Market Characteristics

Characteristics of individual health systems, as well as the markets in which they reside also can be key factors for a health system's population health efforts. The market in which the health system is located matters. For instance, some hospitals serve a large share of the population in a given geographic area. Other hospitals might have many competitors for a patient base in an area. Generally, financial returns and support for population health can be more clearly realized for a hospital with a large market share.[141] Hospitals with a large market share might experience a greater sense of ownership of population-level health outcomes and experience a higher degree of community pressure to take responsibility for those outcomes.[142] Another reason that hospital market matters is because each market is a little different in terms of the saturation of innovative care and reimbursement models.[143] Health systems in states without innovation grants or contracts from federal payers might not currently have the funds available to support population health activities.[144] In addition to variability by market and state, hospitals vary widely and those differences matter as well. Health systems taking the lead on population health work tend to have a history of innovation and a cross-sector approach to their work.[145] This history of work likely means that the health system has built internal support and capacity for data use, evaluation and other key aspects of successful population health work.[146]

Partnerships

Other key supports for a health system venturing into population health are partnerships. Key partners for the health care sector in this work include local public health departments, community partners, the philanthropic community and government. Partnerships in this work are

important as the population health model recognizes the many contributing social and community factors to health outcomes. Given this, no single entity can hold responsibility for health outcomes, making meaningful partnerships essential.[147] Partnerships are further necessary because the multi-sector community change that population health includes often requires a backbone or coordinating organization.[148] The backbone organization could be a hospital. Foundational characteristics of a successful partnership include building trust and respect and aligning leadership on a shared vision.[149] These partnerships can be built over time by small steps, such as sharing information between entities.[150] Local health departments are a key partner because there are many similarities between public health and population health. Due to these similarities, there are overlapping skills, resources and tools that public health accesses that would benefit health systems as they work on population health. Examples of these tools include health assessment and planning tools such as Mobilizing for Action through Planning and Partnerships (MAPP).[151] Additionally, the voluntary national accreditation now available to local health department encourages collaboration, communication and the elimination of silos across the community.[152] Considering the importance of public health inclusion in this work, public health leaders have to be prepared to participate by offering concrete, evidence-based interventions that fit into the payment-driven framework of the health care sector in its demonstration of cost-effectiveness and quality.[153]

Partnerships within the health care sector can be critical as well. As population health represents a transformational change to the health care status quo, champions at all levels of leadership within health care organizations will be advantageous.[154] Further, hospitals and their leadership frequently are viewed as trusted, esteemed individuals in a community. This is a support to a health system moving into population health work as health system leadership might be well-positioned to influence health-supporting, community-wide changes, such as changes to policy.[155]

As population health recognizes that community context matters to health outcomes, engaging with community members and community-based organizations to make community investments in population health is key. Also critical is engaging with the local philanthropic community which might have willing co-investors in population health work.[156] Government is another key partner as the decision-making entity on impactful local policy, as well as at the state and national level, a major driver of broad health reform and reimbursement mechanisms.

What We Learned from Stakeholders

A total of 14 interviews were conducted, including 11 PHIs, representatives of two health systems and one university. In general, the findings present a summary of perspectives on each issue. With the majority of interviewees being PHIs, the summary of key informant interviews is likely to reflect primarily perspectives of the PHIs. However, when representatives of health systems provided different responses than the rest of interviewees, their perspectives are noted separately.

> All of those efforts [CHNAs, ACA, AHC] work to move toward more value-based reimbursement and health systems assuming risk and being accountable for the health of their populations.
>
> *-Interview Respondent*

The interviewee perspectives about the existence of legal and administrative structures, policies, regulations and rules varied considerably. Several respondents noted a lack of financial benefits and a limited number of structures or policies that currently exist to support hospital work in population health. On the other hand, several interviewees, including a representative of one of the health systems, suggested that Community Health Needs Assessments (CHNAs), the Affordable Care Act (ACA), penalties for Medicare readmissions, the movement toward value-based reimbursement and innovative models such as Accountable Health Communities laid the foundation for hospital interest in population health. As one interviewee noted, "the ACO structure while completely overwhelming has provided a good opportunity for hospitals to think about how to work together and to think about patients overall rather than just acute needs." ACA also was described as a helpful tool "for getting hospitals to the table," yet on a flip side it drove hospitals to focus their attention and energy on expanding Medicaid rather than focusing on population health efforts.

> The premise behind global hospital payments is providing fixed, predictable revenues allows hospitals flexibility to invest in care and health improvement activities that reduce avoidable utilization and improve value for consumers and purchasers.
>
> *Health Affairs Blog, Jan. 31, 2017*

Another issue brought up by the interviewees was the role of guidance and policies developed and implemented at the state level. For example, one of the states issued guidance instructing hospitals to work in collaboration with local health departments and submit to the state one joint assessment. The state law also established the same cycle for local health departments and hospitals (three years versus five years) to conduct Community Health/Needs Assessments. Furthermore, the guidance required hospitals to align their community benefit with population health strategies. One interviewee also provided an example of a global payment model utilized in Maryland. The respondent noted that

under this model, a hospital total revenue for all payers is set at the beginning of the year and encourages “health care provider organizations to better address the social determinants of health and keep people healthier and out of the system.”

Although the interviewees recognized the impact of these policies and programs on hospital engagement in population health, internal drivers such as hospital leadership (CEO), staff positions dedicated to population health, “the bottom line” or a financial outcome influenced by social determinants of health, or changes in organizational processes were seen by several interviewees as stronger motivators.

In terms of changes in organizational processes, a representative of one of the health systems emphasized an important role of two strategies in advancing population health efforts. The first strategy focused on “one consolidated office or center for population health.” According to the respondent, this office could be helpful in “identifying opportunities and areas for making progress.” The respondent also noted that a population health strategy has the ability to transform the entire health system. The second strategy referenced by the respondent was “having a consolidated approach across all payors but particular with Medicaid.”

Conclusion

Assistance for hospital participation in population health can come from many different areas. Health reform has generally moved health systems toward population health activities and approaches. Innovative care and reimbursement models, a component of health reform, are also typically supportive of a population health approach to care. Characteristics of hospitals, such as leadership buy-in and market make-up also can influence their participation in population health. Also, community partnerships, particularly with local public health, community-based organizations and community members, can be key components of health system participation in population health work.

Approaches to Addressing Population Health

Based on Literature Review and All Interviews

Findings	Recommendations
• Hospitals are at different points in the continuum of population health, with many hospitals primarily focusing on population health management. • Hospitals engage in population health related activities that span a wide variety of strategies, from conducting Community Health Needs Assessments (CHNAs) to addressing social determinants of health, such as housing, transportation and access to healthy foods.	Hospitals and organizations interested in supporting hospitals in population health work could consider: • Identifying opportunities for building on population health management efforts and moving upstream to address social determinants of health. • Establishing a process to continuously identify, capture and share examples of practical population health strategies by sector (e.g., housing, transportation), including evidence of potential impact of these strategies on health outcomes, of return on investment (ROI) and of required level of resource investment for impact.

Population Health Related Activities Undertaken by Hospitals/Health Systems

The purpose of this section is to provide an overview of the population health related activities undertaken by hospitals. In general, hospitals are at different points in the continuum of population health, with many hospitals primarily focusing on population health management. The definition of population health provided by AHA includes population health management. Given the AHA definition of population health and that many hospitals might be starting their population health journey with population health management work, we included population health management efforts in this list of population health related activities. In order to achieve a measurable improvement in population health, it will be important for hospitals to build on their population health management efforts and embark on non-clinical approaches (such as transportation, housing, access to food and others) for improving the health of populations that can be geographically defined (zip code, city) or they might share some characteristics such as being elderly or having a low income.

The activities listed in this section include care coordination or management, patient engagement, health information technology (HIT), community health needs assessments, primary care as a population health "hub" and upstream activities that address the social determinants of health that keep people healthy and prevent them from becoming patients.

Population Health Management

Population health management is one component of population health, but it is not comprehensive population health without the other key component, community health/population health. The American Hospital Association defines population health management as "the process of improving clinical health outcomes of a defined group of individuals through improved care coordination and patient engagement supported by appropriate financial and care models."[157] An example of this might be offering wraparound care management services to high-risk patients, such as those with co-occurring chronic conditions. Population health management can occur via the establishment of referral mechanisms to community-based and social services, such as a managed services network, for patients who experience difficulty accessing these supports.[158] A noted challenge is the ability to connect patients with social and community-based services in a timely manner. Coordination between health care providers and other community resources to meet patient needs around medical care, food, housing and social support is considered fundamental population health management work.[159] It should be noted that population health management differs from community health in that the coordination that occurs with community-based resources is approached on a patient-by-patient basis, rather than large-scale efforts from the health system to support the health or well-being of all community members. Typically, in population health management, key high-risk groups of the patient population are identified as candidates for care management. Often those selected for these services are experiencing transitions in care, are at high-risk for acute medical events, are uninsured or patients that are high-utilizers of services from a hospital.[160]

Health IT

Health information technology (HIT) in support of population health can be broadly sorted into three categories. These categories include: patient and population health information availability and sharing within a health system, beyond a health system, and with patients.

Examples of population health activities utilizing HIT to increase availability and sharing of information within a health system include using electronic health record information, patient zip

code and socioeconomic information to understand risk of key metrics such as readmission. Another activity is HIT that pairs health information with GIS mapping to understand community risk for illness and opportunities for community-level interventions.[161] The National Academies called specifically for the inclusion of social and behavioral domains within electronic health records to further connect health information with the social determinants of health.[162] Another key role of HIT in population health is predictive analytics. Predictive analytics are when clinical and administrative data are used to stratify patients to identify at-risk members of the patient population.[163] Generally, HIT and the utilization of big data — large datasets that can be used to identify trends and patterns — in medicine is seen to be increasing, so its use will likely continue to grow as a component of population health activities.[164] HIT is seen as a key tool in meeting an unmet need for information from patients, clinicians, administrators, researchers and health policy makers.

There are also population health activities related to health information technology use outside of the physical structure of a hospital. A key population health activity in this category is the ability to electronically track patients across community and health care settings. This strategy allows for coordination of efforts to support patients beyond acute episodes or transitions of care. This means that some patient information is communicated between health systems, to relevant community organizations and public health agencies. Challenges associated with this strategy include the difficulty, expense and privacy concerns associated with linking various IT systems throughout a community. Often in this strategy, entities such as public health agencies may have access to patient information in aggregate that they may then use to understand and monitor community-level outcomes. Community-based organizations might have a distinct permissions level as well that allows them to see who may need their services without violating HIPAA. Information sharing between health systems might allow telemedicine services to share specialist expertise across disparate geographic areas or to allow for information sharing on high-utilizers of emergency rooms across a community.

Lastly, patients may access HIT for the purposes of improving health. One example activity in this category is the distribution to patients of HIPAA compliant tablets. This is typically a service for the highest-risk patients, and the purpose is to provide more robust patient interface with their care team. This strategy may also include telemonitoring as part of tele-homecare. Other HIT activities have included various technology-based strategies to follow-up with patients, connect patients with other resources and to provide various care- and health-related reminders to patients via telephone, text messages and health apps.

CHNA & Community Benefit

Community Health Needs Assessments (CHNAs) are often viewed as a key component of a hospital or health system's population health activities. Often the CHNA is conducted with public health and other key community partners and may be a way in which hospital/community partners are cultivated. The CHNA is an Internal Revenue Service (IRS) requirement for private, tax-exempt, 501(c)3 hospitals. Literature suggests several strategies for improving the effectiveness of CHNAs, including a suggestion to bring CHNAs into greater alignment with the three missions of academic medicine which are clinical care, research and education.[165] It has been suggested that this alignment could provide contextual information to researchers and clinicians in academic medical centers to align their efforts with those related to community and social determinants of care.[166] Essentially, bringing the CHNA in alignment with the pillars of the organization allow the findings of the CHNA to more meaningfully impact the larger functioning of the health system.

Community Benefit

In addition to Community Health Needs Assessments, another key component of the IRS requirements for nonprofit hospitals is community benefit. Community benefit funds can include charity care, unreimbursed costs, subsidized health service, as well as education, research and contributions to community groups.[167] Community benefit must be reported to the IRS within the Form 990 Schedule H of a nonprofit hospital. Some researchers have suggested that including health outcomes reporting in the Schedule H could further move health systems toward population health work.[168] Currently, the Form 990 Schedule H requires reporting on dollar amounts spent on allowable activities. Adding outcome reporting to this form could lend a sense of responsibility to hospitals not just for making investments in community benefit, but for making community benefit investments with demonstrable impact on population-level health outcomes.

Primary care

Some literature describes the expansion of capacity for primary care services as a component of population health work.[169] Specifically, literature suggests that a patient-centered primary care model is in alignment with successful population health work.[170, 171, 172, 173, 174, 175] Hacker & Walker describe patient-centered care or patient-centered medical homes (PCMH) as, "focused on transforming primary care to better deliver "patient-centered" care and to address the whole patient, including their health and social needs."[176] Specific strategies within a PCMH model

include the integration of health coaches, patient navigators or community health workers to accomplish more continuous care, responsive to the patient level of need.[177] Another component of effective primary care delivery for the purposes of population health includes support for clinical preventive services and screening (e.g., immunizations, mammography).

Social Determinants Activities

Community health is a key component in the definition of population health by the AHA and others. AHA has defined community health as "non-clinical approaches for improving health, preventing disease and reducing health disparities through addressing social, behavioral, environmental, economic and medical determinants of health in a geographically defined population."[178] To improve overall population health, hospitals have gone beyond population health management, or integrating non-medical services into patient care, to include the health and wellness of the community as a whole. Hospitals also are looking at the way in which the hospital can utilize its "long-term, place-based economic power of the institution, in combination with its human and intellectual resources, to better the long-term welfare of the community in which the institution is anchored."[179] Specific activities include policy, systems and environmental change approaches to improve social determinants of health in the community (i.e., food, transportation, housing, education) in order to prevent obesity, smoking, physical inactivity and violence, which are the leading risk factors of morbidity and mortality.[180] For examples of these community-based solutions, see *Figures 8−12*, pages 55−65.

Figure 8. **Examples, Approaches and Practices for Population Health: Food**

Food
Challenge to Health
• Hunger or limited available food • Lack of nutritious foods available • Consumption of high-calorie foods contributing to risk of chronic health conditions (e.g., obesity, diabetes) • Stress and anxiety related to insufficient food • Inability to access food prescribed by a physician due to diagnosis of other condition (e.g., high blood pressure, diabetes) • Tooth decay • Unhealthy food consumption may also represent a coping mechanism for unmanaged stress

Figure 8 (continued). **Examples, Approaches and Practices for Population Health: Food**

Food (continued)	
Initiative	***Health System Role***
Screen for food insecurity. *More info at:* *https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/determinants-health-food-insecurity-role-of-hospitals.pdf*	**Arkansas Children's Hospital** implemented a social determinants of health screener to help determine food insecurity status. Other health systems can consider implementing screening tools such as the Children's HealthWatch Hunger Vital Sign. Also, health systems can consider including food insecurity screenings in electronic health records.
Educate patients about available nutrition programs. *More info at:* *https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/determinants-health-food-insecurity-role-of-hospitals.pdf*	Health systems can have dietitians, nutritionists and case managers connect patients with available food resources.
Provide year-round, summer or other feeding programs. *More info at:* *https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/determinants-health-food-insecurity-role-of-hospitals.pdf*	**Eskenazi Health** seeks to lower hospital readmission by providing recently discharged patients with 30 days of medically tailored meals for free. Hospitals can also consider hosting or providing financial support year-round or during summers for feeding programs for school-age children living in food insecurity. These children do not receive subsidized school lunch when school is not in session.
Connect patients with dietitians or nutrition counseling services. *More info at:* *https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/determinants-health-food-insecurity-role-of-hospitals.pdf*	Health systems can provide classes led by health educators to increase awareness and education about food insecurity and healthy eating.
Food program referrals and application assistance. *More info at:* *http://www.hpoe.org/Reports-HPOE/2017/housing-role-of-hospitals.pdf*	**St. Joseph Health Humboldt County,** developed the Healthy Kids Humboldt program to provide food and health insurance referrals and application assistance.

Figure 8 (continued). **Examples, Approaches and Practices for Population Health: Food**

Food (continued)	
Initiative	***Health System Role***
Develop on-site or mobile food pharmacies, pantries and community gardens. *More info at: https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/determinants-health-food-insecurity-role-of-hospitals.pdf*	**Boston Medical Center, Boston, MA,** has hosted a Preventive Food Pantry since 2001. Through this approach health systems can develop a mechanism to share donated or leftover food to those in need. Through this approach health systems can also raise awareness about food insecurity and provide discounts, coupons and vouchers for those in need.
Collaborate with existing food retailers. *More info: https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/determinants-health-food-insecurity-role-of-hospitals.pdf*	Through these partnerships health systems can raise awareness about food insecurity. Also, health systems can support policies and businesses related to food.
Support the development of grocery stores and farmers markets. *More info at: https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/determinants-health-food-insecurity-role-of-hospitals.pdf*	Health systems can consider providing funding, political or other support for the development of grocery stores and farmers market in local communities.
Consider food insecurity in Community Health Needs Assessments (CHNA). *More info at: https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/determinants-health-food-insecurity-role-of-hospitals.pdf*	Health systems can consider which populations within their community are most food insecure as part of their regular CHNA process.
Potential Impact of Approaches Listed Above	
• Increased quality of food consumed • Lower body weight • Lower risk of chronic health conditions (e.g., obesity, diabetes) • Reduced hospital readmissions	

Note: Additional ideas of population health efforts are included in *Appendix D*, page D-1.

Source: Kansas Health Institute (2019). The Role of Hospitals in Population Health: Findings from Statewide Survey and Local Perspectives.

Figure 9. **Examples, Approaches and Practices for Population Health: Transportation**

Transportation	
Challenge to Health	
Transportation barriers affect access to health care services, employment, social isolation and education. These challenges can be particularly acute for low income children and adults, as well as older adults.	
Initiative	***Health System Role***
Invest in mobile health care resources. *More info: https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/sdoh-transportation-role-of-hospitals.pdf*	**CalvertHealth Medical Center** purchased a Mobile Health Center to provide primary and preventive care to community members with transportation challenges. The hospital regularly schedules visits from the Mobile Health Centers to community centers, churches and other accessible places in under-resourced communities. The Mobile Health Center is expanding its sites visited to increase accessibility to low-mobility, priority populations. Examples of this include early childhood centers and senior centers.
Partner with mobile ride-hailing apps. *More info: https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/sdoh-transportation-role-of-hospitals.pdf*	**Denver Health Medical Center** partners with Lyft — a mobile ride-hailing app — to provide vulnerable patients with on-demand transportation services to the hospital. The partnership has been expanded to carry patients to some outpatient clinics as well. Opportunities exist to use this or similar service to connect patients with needed resources, such as groceries, pharmacies and social services.
Provide direct transportation through community partnerships or programs. *More info at: https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/sdoh-transportation-role-of-hospitals.pdf*	**Grace Cottage Family Health & Hospital** partners with a community organization to pair patients with a volunteer driver program to allow patients to access medical appointments while developing community relationships to prevent social isolation. The volunteer program allows for rides to be scheduled with less notice than the county bus service.

Figure 9 (continued). **Examples, Approaches and Practices for Population Health: Transportation**

Transportation (continued)	
Initiative	***Health System Role***
Provide transportation and connection to needed services. *More info at:* *https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/sdoh-transportation-role-of-hospitals.pdf*	**Taylor Regional Hospital** operates a hospital van to service patients in and around Taylor County. Vans can pickup and drop-off patients at facilities that are not hospital-owned, such as clinics. The vans also can deliver prescriptions to patients, and also offers extended operating hours.
Understand the impact of transportation on health in the community. *More info at:* *https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/sdoh-transportation-role-of-hospitals.pdf*	Conduct assessments, such as the CDC Transportation Health Impact Assessment Toolkit, to understand and quantify the effect of transportation barriers on community health.
Expand partnerships to support transportation work. *More info at:* *https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/sdoh-transportation-role-of-hospitals.pdf*	Participate in transportation planning initiatives and educate decision-makers on how public transportation can affect health.
Support community transportation policy and infrastructure programs. *More info at:* *https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/sdoh-transportation-role-of-hospitals.pdf*	Become involved with efforts such as Vision Zero and Complete Streets to increase ease of access to health care and health supporting community resources.
Screen patients for transportation needs. *More info at:* *https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/sdoh-transportation-role-of-hospitals.pdf*	Utilize a screening tool, such as the Social Needs Screening Toolkit, to identify patients with transportation needs. Hospitals can also consider integrating this information with electronic health records.
Educate staff about transportation issues. *More info at:* *https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/sdoh-transportation-role-of-hospitals.pdf*	Use care coordinators, community health workers and other staff to help patients identify and access transportation resources.

Figure 9 (continued). **Examples, Approaches and Practices for Population Health: Transportation**

Transportation (continued)	
Initiative	***Health System Role***
Promote transportation options and awareness. *More info at:* *https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/sdoh-transportation-role-of-hospitals.pdf*	Provide multi-lingual promotional materials for affected communities regarding transportation options and resources.
Support programming and infrastructure to reduce patient travel. *More info at:* *https://www.aha.org/system/files/hpoe/Reports-HPOE/2017/sdoh-transportation-role-of-hospitals.pdf*	Increase capacity for telehealth and mobile health clinic services.
Potential Impact from Approaches Listed Above	
• Increased physical activity • Lower body weight • Lower rate of traffic injuries • Decreased pollution • Improved mobility for non-drivers • Limit to negative health outcomes due to missed follow-up appointments and unfilled prescriptions • Decreased food insecurity	

Note: Additional ideas of population health efforts are included in *Appendix D*, page D-1.

Source: Kansas Health Institute (2019). The Role of Hospitals in Population Health: Findings from Statewide Survey and Local Perspectives.

Figure 10. **Examples, Approaches and Practices for Population Health: Housing**

Housing
Challenge to Health
• Poor sanitation, lack of heating and cooling, compromised structural integrity, exposure to allergens or pests, stress and risks associated with homelessness or unstable housing, severe rent burden • Homeless individuals are more likely to have infectious diseases (e.g., pneumonia, tuberculosis, HIV) and mental health disorders. The homeless population is aging, and older homeless adults have high rates of chronic health conditions such as cardiovascular disease, diabetes and COPD. • Children living in unstable housing are more likely to have developmental delays. Substandard housing also can cause or exacerbate asthma.

Figure 10 (continued). **Examples, Approaches and Practices for Population Health: Housing**

Housing (continued)	
Initiative	***Health System Role***
Development of affordable housing units. *More info at: http://www.hpoe.org/Reports-HPOE/2017/housing-role-of-hospitals.pdf*	**Bon Secours Baltimore** invested in the development of more than 700 affordable housing units by purchasing vacant properties near hospital facilities. The organization also made a commitment to involve community members in all future developments. Additional affordable housing units are in-development.
Home assessments, renovations and repairs. *More info at: http://www.hpoe.org/Reports-HPOE/2017/housing-role-of-hospitals.pdf*	**Children's Mercy Kansas City** developed a Healthy Homes initiative to provide environmental assessments, renovations and repairs. Assessments are conducted by an environmental hygienist and a health coordinator. An action plan is developed, and coaching occurs via phone or in-person. The program initially focused on asthma but was expanded to include other significant health conditions. The program has also been expanded to include assessments and action plans for classrooms and schools.
Medical respite program for recently discharged, chronically homeless individuals. Medical respite includes short-term transitional housing for individuals well enough for hospital discharge, but not well enough to return to the street or a shelter. *More info at: http://www.hpoe.org/Reports-HPOE/2017/housing-role-of-hospitals.pdf*	**St. Joseph Health Humboldt County** developed a medical respite program for chronically homeless individuals discharged from hospitals in the county. Services include case management and social services referrals. The project began via a grant, but due to the success of the initiative, it is now included in the operational budget of the hospital. The system partnered with a community foundation to open additional medical respite beds co-located with a family shelter in the community.
Community benefit investments in housing. *More info at: https://www.rwjf.org/content/dam/farm/reports/reports/2017/rwjf435716*	Health systems can consider investing community benefit dollars in housing-efforts as housing is an allowable community benefit expense.
Develop a Housing First program. *More info at: http://www.hpoe.org/Reports-HPOE/2017/housing-role-of-hospitals.pdf*	**St. Luke's Health System & Saint Alphonsus Health System** collaborated with local government and community groups to develop a Housing First program. This effort came out of discussions in a community Roundtable on Homelessness that both health systems participated in.

Figure 10 (continued). **Examples, Approaches and Practices for Population Health: Housing**

Housing (continued)	
Initiative	***Health System Role***
Develop a Housing First program. *More info at: http://www.hpoe.org/Reports-HPOE/2017/housing-role-of-hospitals.pdf*	**St. Luke's Health System & Saint Alphonsus Health System** collaborated with local government and community groups to develop a Housing First program. This effort came out of discussions in a community Roundtable on Homelessness that both health systems participated in.
Provide housing and support services to chronically homeless individuals. *More info at: http://www.hpoe.org/Reports-HPOE/2017/housing-role-of-hospitals.pdf*	**University of Illinois Hospital** partnered with the Center for Housing and Health to provide stable housing and support services to chronically homeless individuals. Health care providers refer patients to the program. Applications are then reviewed by a panel of physicians, social workers and others. A determination is made on need and eligibility. When an application is accepted, an outreach worker reaches out to individuals to extend an offer for transitional housing. This process can take months.
Neighborhood revitalization. *More info at: http://www.hpoe.org/Reports-HPOE/2017/housing-role-of-hospitals.pdf*	Health systems can consider developing community centers, jobs programs and affordable housing developments
Medical care for the homeless. *More info at: http://www.hpoe.org/Reports-HPOE/2017/housing-role-of-hospitals.pdf*	Health systems can provide preventive and acute care for homeless or at-risk individuals in traditional medical facilities, shelters or via mobile medical vans
Transitional or permanent supportive housing. *More info at: http://www.hpoe.org/Reports-HPOE/2017/housing-role-of-hospitals.pdf*	Build and staff affordable housing units for disabled, elderly or chronically homeless individuals and families. Services may include case management and may follow a "Housing First" model, where housing needs are met before other forms of treatment can be successful.
Potential Impact from Approaches Listed Above	
• Reduce emergency department use associated with asthma • Improve care transitions • Reduce unreimbursed, long-term hospital stays • Reduce readmissions • Reduce uncompensated care	

Note: Additional ideas of population health efforts are included in *Appendix D*, page D-1.

Source: Kansas Health Institute (2019). The Role of Hospitals in Population Health: Findings from Statewide Survey and Local Perspectives.

Figure 11. **Examples, Approaches and Practices for Population Health: Education**

Education	
Challenge to Health	
• Education is a key social determinant of health as it is a strong predictor of future income — and ability to access health-supporting resources. • Education interventions often focus on school-age children in the public education system. Intervening early in children's life improve long term health outcomes.	
Initiative	***Health System Role***
Implement health-promoting changes in K-12 schools. *More info at:* *https://www.northeastern.edu/iuhrp/wp-content/uploads/2016/05/PopHealthBusinessCaseFullRpt-5-1.pdf*	**Kaiser Permanente (KP)** implemented the program Thriving Schools to increase healthy eating and physical activity among student, staff and teachers in selected K-12 schools. KP partnered with organizations such as the Alliance for a Healthier Generation, Safe Routes to School National Partnership, School-Based Health Alliance, among others, to make this initiative a success. Thriving Schools currently is being implemented in 300 schools across the KP service area.
School-based clinics. *More info at: https://www.hrsa.gov/our-stories/school-health-centers/index.html*	Health system investment in school-based clinics can provide the opportunity to make preventive investments in the health of young people and their family members. School-based clinics frequently provide primary medical care, mental and behavioral health care, dental and oral health care, health education, substance abuse counseling, case management services and nutrition education.
Collaborate with community partners for school-based health initiatives: *More info at:* *https://www.cdc.gov/healthyschools/wscc/index.htm*	Hospitals can consider partnering to support efforts like Whole School, Whole Community, Whole Child initiative that aims to address the social, emotional and physical health of school children.
Utilize supported strategies. *More info at:* *https://www.healthiergeneration.org/take_action/businesses/healthcare/*	Organizations like the Alliance for a Healthier Generation have and continue to support strategies for addressing health and its social determinants in a school setting.

Figure 11 (continued). **Examples, Approaches and Practices for Population Health: Education**

Education (continued)
Potential Impact from Approaches Listed Above
• Lower body weight • Decreased risk for chronic conditions • Improved academic performance • Increased productivity through reduced absenteeism • Reduced stress

Note: Additional ideas of population health efforts are included in *Appendix D*, page D-1.

Source: Kansas Health Institute (2019). The Role of Hospitals in Population Health: Findings from Statewide Survey and Local Perspectives.

Figure 12. **Examples, Approaches and Practices for Population Health: Economic Development and Employment**

Economic Development & Employment	
Challenge to Health	
• Decreased access to health supporting resources such as a supportive housing environment and healthy foods. • Financial stress can contribute to poor mental health.	
Initiative	***Health System Role***
Educate participants on financial management. *More info at: http://www.hpoe.org/Reports-HPOE/hospital_based_strategies_creating_culture_health_RWJF.pdf*	**Bon Secours Baltimore Health System** implements a program called Our Money Place that teaches participants to manage their finances that includes debt counseling, screening for eligibility for community and public resources. The program also provides emergency eviction assistance services.
Offer community members career development. *More info at http://www.hpoe.org/Reports-HPOE/hospital_based_strategies_creating_culture_health_RWJF.pdf*	**Bon Secours Baltimore Health System** implements a program called Career Development that offers participants education, workforce development and financial literacy training. The program also includes job placement assistance.
Community Investments. *More info at: https://www.rwjf.org/content/dam/farm/reports/reports/2017/rwjf435716*	**Dignity Health** and other health systems have served as community investors by making investments ranging from grants, to forgivable loans, principal-only repayment, sub-market return loans, full-market rate loans and risk-adjusted market rate loans to develop health-supporting assets in the community.

Figure 12 (continued). **Examples, Approaches and Practices for Population Health: Economic Development and Employment**

Economic Development & Employment (continued)	
Initiative	***Health System Role***
Partner with community development banks. *More info at:* *https://www.rwjf.org/content/dam/farm/reports/reports/2017/rwjf435716*	Hospitals can consider making below-market rate deposits in credit unions and community development banks or purchase stocks in these same institutions to allow them to make small business and affordable housing loans.
Partner with community organizations. *More info at:* *https://www.rwjf.org/content/dam/farm/reports/reports/2017/rwjf435716*	**Cleveland Clinic** along with partners at the Cleveland Community Foundation, Case Western Reserve University and the City of Cleveland have partnered to form the Greater University Circle Initiative to rebuild and reinvest in low-income neighborhoods. The goals of the initiative include creating jobs at employee-owned cooperatives such as a laundromat, greenhouse and a solar installation firm.
Make non-financial investments in economic development. *More info at:* *https://www.rwjf.org/content/dam/farm/reports/reports/2017/rwjf435716*	Health systems, as community anchor institutions, influence economic development. Health systems have the opportunity to consider things such as revitalization when making decisions about employment practices, procurement of operational services and utilization of non-hospital land health systems often own in their communities.
Provide technical assistance to local businesses. *More info at:* *https://www.rwjf.org/content/dam/farm/reports/reports/2017/rwjf435716*	**Henry Ford Health System and Detroit Medical Center** partnered with their community to develop 1,000 units of new housing and provide technical assistance and financing to 30 local businesses.
Join existing initiatives. *More info at:* *http://buildhealthchallenge.org/* *OR* *https://www.investhealth.org/* *OR* *http://ghpc.gsu.edu/project/bridging-for-health/*	More than 70 community/health system partnerships are participating in philanthropic community development opportunities BUILD Health Challenge, Invest Health and Bridging for Health.
Potential Impact from Approaches Listed Above	
• Decrease stress • Prevent homelessness • Increased access to health supporting resources	

Note: Additional ideas of population health efforts are included in *Appendix D*, page D-1.

Source: Kansas Health Institute (2019). The Role of Hospitals in Population Health: Findings from Statewide Survey and Local Perspectives.

Often these efforts happen through a broad-based community or coalition approach where a variety of strategies and funding strategies are utilized to make change.[181] The role of a hospital in the implementation of these activities may vary. These activities will be important for hospitals to explore as movement continues toward hospital payment for the overall health of a population.

Policy components of population health work can be regarding disparity reduction, early childhood interventions, urban planning, community development or housing. Disparity reduction population health work can include utilizing data to consider the determinants of health or health outcome of sub-population groups, by race/ethnicity, age, geography, sex or other factors. Identifying subpopulation groups disproportionately experiencing negative outcomes allows the hospital to then partner with that group, the community and community partners to respond appropriately. There are also policy options to address upstream determinants such as early childhood interventions. For example, voters in Denver set aside a portion of sales tax revenue to fund the city preschool program. A similar sales tax initiative was passed in San Antonio to make high-quality, full-day preschool available to the young children of that community.[182] Other community policy pieces of population health might be fluoridation of community water supplies, lead testing or reduction of the density of alcohol outlets.[183; 184] Hospitals have an opportunity to utilize their leverage as community anchor institutions to support policies such as these that have a measurably positive effect on the health of a population.

Education and income are upstream determinants that contribute to improved health outcomes. Given this, there are hospital population health strategies related to education and workforce development that may be important for hospitals to consider. Scientifically supported strategies from County Health Rankings include:

- Career academies — establish small learning communities in high schools focused on fields such as health care, finance, technology, communications or public service.
- Dropout prevention programs — provide supports such as mentoring, counseling or vocational training or undertake school environment changes to help students complete high school.
- Preschool education programs — provide center-based programs that support cognitive and social-emotional growth among children who are not old enough to enter formal schooling.

- Early childhood interventions, such as early childhood education and parental support programs, have positive health impacts and help address economic disadvantage and health disparities.[185] Better education and income typically correlate with an improved health outcome across most measurable dimensions. If hospitals want to improve the health of their community, this type of upstream investment in educational access and workforce development would be key.

Another key upstream population health activity for hospitals is collaboration with public health agencies and community organizations. This collaboration can include a number of specific, previously discussed activities, such as collaboration on community health needs assessments or information sharing for patient care coordination/management. Some examples of the issues hospitals may collaborate with the community to address include: access to care, preventive care, job training, chronic disease management, nutrition services and youth interventions.[186] Other specific activities that are "scientifically supported" from County Health Rankings include: Risk assessment & personalized approaches to fall prevention among older adults — conduct assessments that gauge older adults' risk of falling and develop personalized approaches to help prevent falls; Activity programs for older adults — offer group educational, social or physical activities that promote social interactions, regular attendance and community involvement among older adults.[187] Other activities could include: hosting outreach centers in vulnerable areas to serve as resource hubs for things such as community fitness classes, community health initiative, emergency food baskets, empowerment (chronic disease self-management), health education seminars and classes, health screenings, healthy kids in healthy homes programs, homemaker care job training, in-home health education and back to school programs.[188]

Each of these described interventions likely could not be carried out by a health system alone. Instead, things like fall risk assessments might be assessed by a community health worker or community paramedic. Social service agencies might offer spaces and programming for older adult educational, social or physical activities. Collaborations across public health, health care and social services can be instrumental in preventing leading causes of morbidity/mortality. This can include work to make available opportunities for physical activity. When considering the most appropriate way for hospitals to engage in population health, a primary recommendation might be to assess the needs in the community and then partner with the community to develop solutions.[189]

Another strategy for population health that hospitals can engage in is that of a community investor. The Robert Wood Johnson Foundation has profiled several hospitals that have made loans to organizations in their community that will benefit the health of the community. The return on investment for the hospital is two-fold, there is a financial return in the repayment of the loan and a return in the form of the benefits to the community and the hospital's patient population via the services provided by that organization.[190] The hospitals who have implemented this strategy have seen it as an opportunity for both a social and financial return on investment.

What We Learned from Stakeholders

A total of 14 interviews were conducted, including 11 PHIs, representatives of two health systems and one university. In general, the findings present a summary of perspectives on each issue. With the majority of interviewees being PHIs, the summary of key informant interviews is likely to reflect primarily the perspectives of PHIs. However, when representatives of health systems provided different responses than the rest of interviewees, their perspectives are noted separately.

The interviewees suggested that hospitals across the country have been engaging in a variety of population health activities. To understand the scope of these activities, they recommended to review published case studies and articles.

According to interviewees, including the representatives of two health systems, many hospitals started their work in population health by addressing food insecurity issues and housing (e.g., address air quality as it related to asthma). For instance, a hospital partnered with the city to create a pool of subsidized housing. Another example focused on efforts by a hospital to identify homeless, super-utilizers and cover their housing costs in order to improve their health outcomes. Food insecurity and economic development have been often identified as high community needs and prompted hospital response. The last few years has also seen a large increase in hospital interest in implementing social determinant screeners. Some hospitals incorporated social determinants screeners into their EMRs systems. However, some hospitals have been struggling with how to effectively use information collected from screeners and connect individuals to social services. A representative of one of the health systems note that their health system purchased an app that included a regularly updated list of social services available in the area. The app also allowed for the creation of a feedback loop, so the hospital knew when someone accessed a service. Social service organizations were able to participate

for free. Most social services organizations agreed to participate because “it helped them to automate their services and get access to their clients.” Another representative of a health system highlighted their efforts related to supporting the development of a comprehensive community center. The center was centrally located and addressed many community needs by providing child care, legal services and health care services, among others.

Furthermore, several interviewees noted that hospitals have been interested in developing maps of their catchment area in order to understand social and economic conditions of their patients. Other examples provided by interviewees include:

- Collaborative Community Health Needs Assessments (CHNAs) and Community Health Improvement Plans (CHIPs).
- Development of institutional policies that require senior leadership to engage in civic affairs.
- Review of preventable ED and inpatient utilization data along with census track demographics data and some population health metrics.
- Community investments via community development financial institutions (CDFI).
- Support for healthy food financing and a development of food systems.
- Support for child care initiatives.

Conclusion

In general, hospitals are at different points in the continuum of population health, with many hospitals primarily focusing on population health management. Population health management strategies focus on care coordination and health IT solutions. Population health strategies typically include efforts that aim to address inequities in determinants of health (e.g., housing, education) by changing policies and systems. In order to achieve a measurable improvement in population health, it will be important for hospitals to build on their population health management efforts and embark on non-clinical approaches (e.g., such as transportation, housing, access to food, other approaches) for improving the health of populations that can be geographically defined (zip code, city) or they may share some characteristics such as age or income status.

When it comes to hospital engagement in population health, the literature suggests that it not only matters what activities are done, but how activities are done. Influential population health work may have four characteristics: research, an understanding of the decision-making

environment, effective stakeholder engagement and strategic communication.[191] The literature also describes the necessity of cooperation between clinical delivery systems and community and public health agencies to improve population health.[192] In addition to mature partnerships with the community, other goals for population health referenced in the literature include the provision of coordinated preventive health services, culturally and linguistically appropriate care, the promotion of healthy behaviors, and tracking of population health metrics.[193] Further, value-based reimbursement and health care workforce competency in population health are important tactics for successful population health work.[194] Hospitals have been described as in a unique position to lead or "anchor" population health work due to their established presence in the community, knowledge and resources. [195, 196] Other roles described in literature for hospitals in population health work include, that of "specialist, promoter or convener."[197]

The interviewees echoed findings from the literature and noted that many hospitals or health systems have been investing their time and resources in building stronger relationships with their community partners and stakeholders. In terms of population health activities, the interviewees suggested that housing and food insecurity issues were often key priority areas for hospitals. According to the interviewees "… they see investment in this area as a way to improve health outcomes and also an ROI in reducing the number of people in their ED." The interviewees also highlighted efforts related to incorporating social determinants of health screening in hospital or health system operations and connecting individuals to social services.

Part II. Understanding Interest of Public Health Institutes in Population Health

Reasons for Engaging Hospitals in Population Health

Based on Interviews with Public Health Institutes

Findings	Recommendations
• Interviewees became interested in working with hospitals through their work on Community Health Needs Assessments and policy matters related to Medicare, access to care and the implementation of community benefit programs. • Increase in organizational size and capacity were also cited as contributing factors to the provision of new services to hospitals or health systems. • The passage of the Patient Protection and Affordable Care Act (ACA) prompted hospitals to identify ways for adapting to the changing health care delivery landscape and created opportunities for organizations such as public health institutes to help hospitals navigate these new realities. • Population health efforts also were seen by the interviewees as an opportunity to bridge the divide between public health and health care, and advance the PHI organizational mission to improve health. • Additionally, the interviewees noted that the hiring and purchasing power of a hospital makes them a critical partner in health improvement efforts.	Hospitals and organizations interested in supporting hospitals in population health work could consider: • Integrating a goal regarding this portfolio of work into their organizational strategic plans and developing an accompanying workplan or theory of change for meeting the strategic goal. • Identifying opportunities to explicitly integrate population health efforts into Community Health Needs Assessments (CHNAs).

What We Learned from Stakeholders

A total of 12 interviews were conducted for this question, including 11 PHIs and one university. This question was not addressed by the two representatives from health systems.

The interviewees listed a number of factors that led to their decision to engage hospitals in population health work. Several interviewees noted that they became interested in working with

hospitals through their work on Community Health Needs Assessments, policy matters related to Medicare, access to care and the implementation of community benefit programs. Increase in organizational size and capacity were also cited as contributing factors to the provision of new services to hospitals or health systems. Furthermore, interviewees noted that the passage of the Affordable Care Act (ACA) prompted hospitals to identify ways for adapting to the changing health care delivery landscape and created opportunities for public health institutes to help hospitals navigate these new realities. Population health efforts also were seen by the interviewees as an opportunity to bridge the divide between public health and health care, and advance the organizational mission of the PHIs to improve health. Additionally, the interviewees noted that the hiring and purchasing power of the hospitals make them a critical partner in health improvement efforts. They also acknowledged increased hospital interest in exploring approaches for engaging in population health and a shift of community benefit programs from marketing department to departments devoted to population health activities. The interviewees felt well-positioned to provide the needed support to hospitals given their current role as information brokers and conveners of conversations.

Relevant Expertise

Based on All Interviews

Findings	Recommendations

The following knowledge and skills were identified as being useful for helping hospitals in advancing population health work.
Knowledge:
• Payment systems and how they work
• Financial structure of hospitals
• Health policy
• Social determinants of health
• Contracting options and how they work
• Health care language
• Health care landscape and relevant politics
• Pressures and issues that hospitals face
• Private and public insurance (Medicaid and CHIP)
• Specific content area
  ○ Trauma
  ○ Behavioral health
• Organizational behavior
Skills:
• Health data analysis and visualization
• Health economics
• Cost-effective analysis
• Facilitation
• Ability to handle difficult conversations
• Convene conversations in neutral manner
• Ability to provide actionable information
• Leadership
• Stakeholder engagement skills
	Hospitals and organizations interested in supporting hospitals in population health work could consider:
	• Assessing staff knowledge and skills necessary to engage in efforts focused on addressing population health.
	• Identifying and implementing strategies for closing potential gaps in skills and knowledge. Strategies could include peer learning opportunities, webinars, workshops and classes, among others.

What We Learned from Stakeholders

A total of 14 interviews were conducted, including 11 PHIs, representatives of two health systems and one university. In general, the findings present a summary of perspectives on each issue. With the majority of interviewees being PHIs, the summary of key informant interviews is likely to reflect primarily perspectives of the PHIs. However, when representatives of health systems provided different responses than the rest of interviewees, their perspectives are noted separately.

Organizations interested in working with hospitals on population health issues are needed to possess a diverse set of skills and competencies. Knowledge or understanding of health care language, payment systems, public health and pressures and issues that hospitals face are key preconditions for successful engagement with hospitals in population health. The need for facilitation skills and background in health care administration have been recognized as critical foundation for work with hospitals. A representative of a health system emphasized that "strong knowledge of social determinants of health and theories around their impact on clinical health" helped them to engage their health system and other hospitals in this work. The respondent also emphasized "strong knowledge of payment systems and how they work …" Furthermore, it was noted that understanding the local landscape and the state-level efforts around Medicaid and the Children's Health Insurance Program (CHIP) would be critical for identifying a potential role for an organization. Finally, the respondent suggested that the "ability to build partnerships and find ways that are mutually beneficial" would be essential for advancing population health work. Another representative of a health system discussed the importance of training needed to enable organizations to translate population health "into the clinical world." Other essential skills/knowledge referenced by the respondent included the ability to conduct cost-effectiveness analysis, health policy, health economics and data visualization. *Figure 13* (page 75) highlights skills and competencies within four main categories: knowledge, backgrounds, skills and other.

Figure 13. **Skills and Competencies Necessary to Support Population Health Work**

Background	Knowledge	Skills	Other

• Public Health Law
  ○ Knowledge of requirements
• Hospital Administration/Health Care Administration
• Former hospital CEO
	• Payment systems and how they work
	• Financial structure of hospitals
	• Health policy
	• Determinants of health
	• Contracting options and how they work
	• Health care language
	• Health care landscape and relevant politics
	• Pressures and issues that hospitals face
	• Private and public insurance (Medicaid and CHIP)
	• Specific content area
	  ○ Trauma
	  ○ Behavioral health
	• Organizational behavior
		• Health data analysis and visualization
		• Health economics
		• Cost-benefit analysis
		• Facilitation
		• Ability to handle difficult conversations
		• Convene conversations in neutral manner
		• Ability to provide actionable information
		• Leadership
		• Stakeholder engagement skills
			• Ability to develop relationships with hospitals and hospital associations
			• Recognize that hospitals have "relative power," however underutilized, around social justice
			• Availability of meeting space

Source: Kansas Health Institute (2019). The Role of Hospitals in Population Health: Findings from Statewide Survey and Local Perspectives.

Provided Services

Based on All Interviews

Findings	Recommendations
The following services were provided by organizations to hospitals/health systems in order to advance their work in population health: • Provided facilitation services • Provided information on different approaches that can be effective in moving health care upstream. Specifically, gathering and sharing examples from hospitals across the country. • Provided technical assistance and information related to equity, population health data, logic models or other issues. • Assisted in conducting Community Health Needs Assessments (CHNAs) • Provided grant writing assistance • Helped hospitals get funding for implementation of population health efforts • Provided research assistance • Assisted with logic modeling • Provided evaluation services • Helped access current research • Assisted with convening community stakeholders and engaging leadership • Conducted Health Impact Assessments (HIAs) • Placed fellows at the hospitals to provide mentoring and support • Supported statewide convenings	Organizations interested in supporting hospitals in population health could consider: • Reviewing services outlined in the section “Provided Services” and identifying services that can be provided by their organization. When making decisions, consider challenges encountered by these organizations during the provision of services. Hospitals could consider: • Reviewing services outlined in the section “Provided Services” and identifying services that could assist their organizations in advancing population health efforts.

What We Learned from Stakeholders

A total of 14 interviews were conducted, including 11 PHIs, representatives of two health systems and one university. In general, the findings present a summary of perspectives on each issue. With the majority of interviewees being PHIs, the summary of key informant interviews is likely to reflect primarily perspectives of the PHIs. However, when representatives of health systems provided different responses than the rest of interviewees, their perspectives are noted separately.

The interviewees highlighted three types of support that more often were provided by their organizations to hospitals:

- Facilitation services.
- Different approaches that can be effective in moving health care upstream. Specifically, gathering and sharing examples from hospitals across the country.
- Technical assistance and information related to equity, population health data, logic models or other issues.

A representative of one health system noted that they have been specifically engaged in providing thought leadership, sharing new learnings and approaches with their health systems and organizations across the county (e.g., presenting at the conferences, publishing research). Their staff also served as facilitators, helping others to "identify solutions and recommendations based on their shared learning and common experiences." Another representative of a health system said that their organization focused on developing logic models, helping their health system assess effectiveness of interventions and training Community Health Workers (CHWs).

The organizations provided a variety of other services as well:

- Assisted in conducting Community Health Needs Assessments (CHNAs).
- Provided grant writing assistance.
- Helped hospitals get funding for implementation of population health efforts.
- Provided research assistance.
- Assisted with logic modeling.
- Provided evaluation services.
- Helped access current research.
- Assisted with convening community stakeholders and engaging leadership.
- Conducted Health Impact Assessments (HIAs).

- Placed fellows at the hospitals to provide mentoring and support.
- Supported statewide convenings.

In general, the interviewees reported that the provision of these services was mutually beneficial and that hospitals had positive experience with them. However, they also highlighted a few challenges with providing these services. *Figure 14* describes some benefits and challenges with providing services to hospitals.

Figure 14. **Experience with Providing Services to Hospitals**

Benefits	Challenges
• Understand constraints under which hospitals operate • Demonstrate work with hospitals to funders and receive additional funding for research • Help PHIs to advance their mission and address inequities more effectively • Interesting and innovative work • Build knowledge base and learn about a variety of approaches • Allow to be on the cutting edge • Opportunity to conduct CHNAs • Opportunity to make health actionable	• Use of different terminology and priorities (hospital focus on financial side vs. health) • Underfunded work • Difficult to engage senior leadership but essential for making progress • Have to let your agenda go and let everyone talk • Access to hospital data • Tight timelines. Hospitals often move at a different pace than community partners do, so hospitals can get impatient with community processes • PHIs limited expertise in reimbursement structures • Outdated population health data • Institutes do not have a business model that supports work with hospitals • Hierarchical system of leadership • Differences in how providers are trained

Source: Kansas Health Institute (2019). The Role of Hospitals in Population Health: Findings from Statewide Survey and Local Perspectives.

Suggestions for Organizations

Based on All Interviews

Findings	Recommendations
The following tips were provided for organizations interested in engaging hospitals in population health work: • Find and recruit champions from hospitals that will advocate for population health. • Convene stakeholders (e.g., hospital staff, leadership, boards) to identify their needs and priorities. • Build a shared vision and goals rather than approaching hospitals with financial requests. • Build relationships with organizations that closely work with hospitals such as state hospital associations. • Identify financial streams to support the work of hospitals in population health. • Take advantage of resources available (e.g., County Health Rankings, CDC Community Guide, case studies around the state). • Convene or participate in conferences discussing hospital engagement in population health.	Organizations interested in supporting hospitals in population health work could consider: • Incorporating strategies outlined in the section "Suggestions for Organizations" in planning and implementing any projects or efforts around population health with hospitals and health systems. Hospitals could consider: • Incorporating strategies outlined in the section "Suggestions for Organizations" in planning and implementing any projects or efforts around population health.

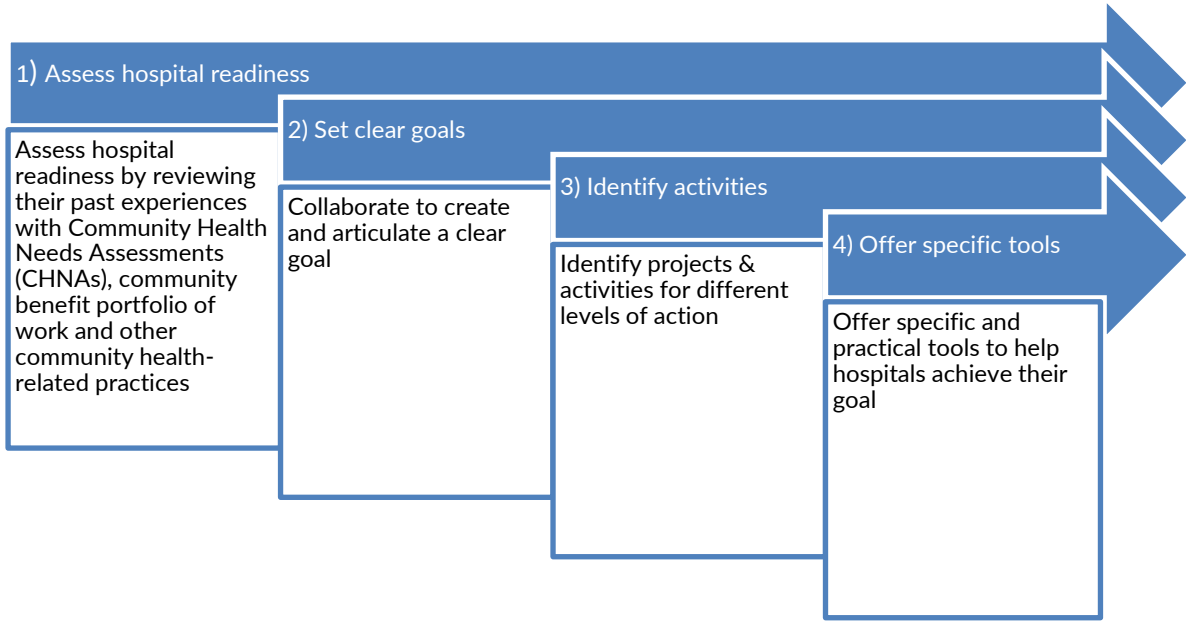
What We Learned from Stakeholders

A total of 14 interviews were conducted, including 11 PHIs, representatives of two health systems and one university. In general, the findings present a summary of perspectives on each issue. With the majority of interviewees being PHIs, the summary of key informant interviews is likely to reflect primarily perspectives of the PHIs. However, when representatives of health systems provided different responses than the rest of interviewees, their perspectives are noted separately.

The interviewees provided a variety of suggestions for other institutes and/or organizations interested in engaging hospitals in population health. Several interviewees stressed the

importance of understanding the culture and business model of each hospital type. As one respondent noted "… Many people would never enter the home of someone who is of different faith or culture without learning and being culturally sensitive to them, but we don't think the same way in dealing with a corporation like a hospital …" Varying readiness levels of hospitals to tackle population health work was another critical issue raised by interviewees. Providing too much information or offering a variety of options to a hospital with a lower level of readiness can overwhelm an organization and hinder their interest in engaging in population health. To avoid these issues, the interviewees suggested 1) assessing hospital readiness by reviewing their past experiences with Community Health Needs Assessments (CHNAs), community benefit portfolio of work and other community health-related practices; 2) creating and articulating a clear goal; 3) identifying activities/projects for different levels; and 4) offering specific and practical tools (*Figure 15*). Providing education or information to hospitals was seen as an initial step. However, to sustain momentum, the interviewees, including representatives of health systems, recommended providing hospitals with detailed guidance and tools for initiating and implementing efforts. One example shared by a respondent focused on creating a dashboard for hospitals that can help them to understand what metrics to measure, at what stage, and how to take an action.

Figure 15. **Practical Strategies for Assisting Hospitals with Advancing Population Heath Efforts**



Source: Kansas Health Institute (2019). The Role of Hospitals in Population Health: Findings from Statewide Survey and Local Perspectives.

The interviewees agreed that public health institutes can play a key role in supporting hospitals work in population health. The respondents suggested that public health institutes should promote services that they are already comfortable with (e.g., facilitation, stakeholder engagement, evaluation, data visualization) and cautioned against competing with companies such as Deloitte that might do things such as health care finance consulting.

Specifically, the interviewees suggested the following strategies for hospitals:

- Ensure that the definition of population health used by a hospital focuses on addressing determinants of health or social and environmental factors that shape health (e.g., housing, food insecurity, education) and health disparities for populations beyond patients. Ensure consistent population health definition is used across the organization and with partners.
- Establish a position (e.g., single office) to coordinate population health activities the hospital engages in.
- Include socioeconomic data and information about the social determinants of health within electronic health records.
- Engage with partners such as local health departments, community organizations and university extension offices around population health efforts.
- Conduct a joint community health assessment with local health department.
- Use available resources (e.g., County Health Rankings, CDC Community Guide, case studies around the state) to identify strategies for advancing population health efforts.
- Identify ways for capturing and evaluating benefits related to population health work.

Furthermore, the interviewees suggested the following tips for building a successful collaboration with hospitals around population health:

- Find and recruit champions from hospitals that will advocate for public health approach to population health.
- Convene stakeholders (e.g., hospital staff, leadership, boards) to identify their needs and priorities.
- Build a shared vision and goals rather than approaching hospitals with financial requests.
- Build a relationship with your hospital association.
- Identify financial streams to support hospital work in population health.

- Do not reinvent the wheel. Take advantage of resources available (e.g., County Health Rankings, CDC Community Guide, case studies around the state).
- Convene or participate in conferences such as the 2017 Midwest Forum on Hospitals, Health Systems and Population Health.

The interviewees also noted the value of peer learning and suggested establishing cross-learning opportunities for PHIs interested in assisting hospitals with advancing their population health efforts.

Part III. Findings from District Discussions and Survey with Kansas Hospitals

The third part of the report focuses on the Kansas specific findings from district discussions with hospitals and the online survey. It is included in the report as it provides valuable insights and recommendations.

District Discussions with Hospitals

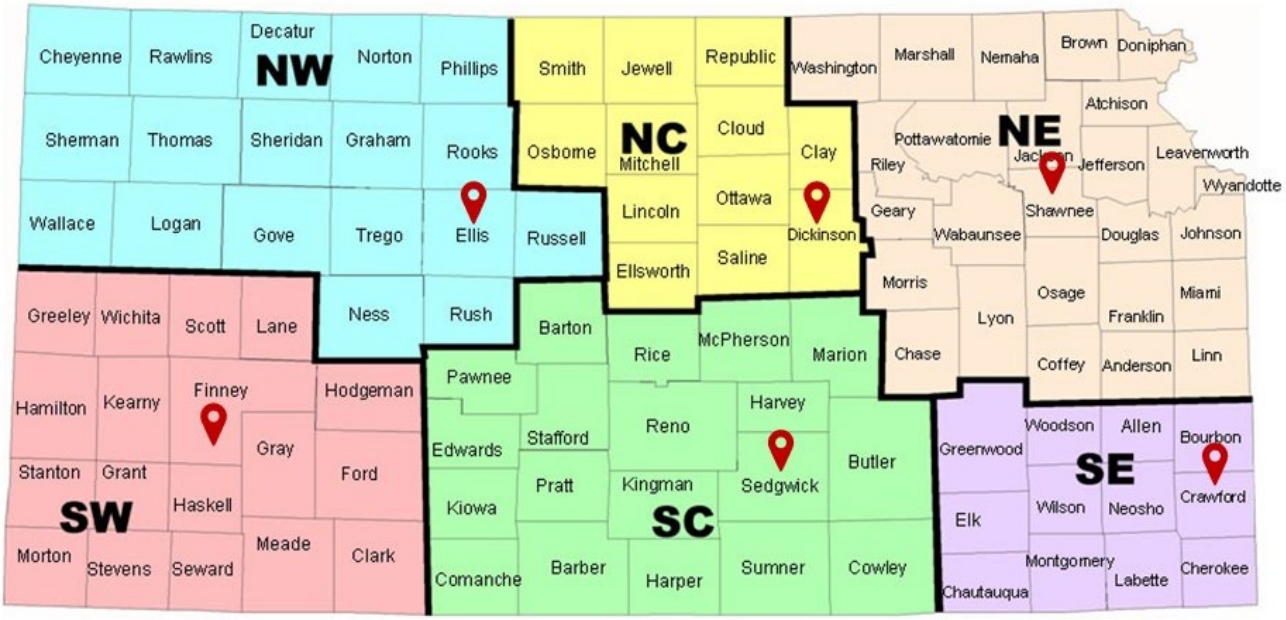
Findings	Recommendations
• Out of 146 responses provided by 83 respondents, "providing charity care" (49 responses) and "conducting community health needs assessments" (38 responses) were identified as most frequent activities that hospitals engage in as part of their community or population health work. "Addressing issues in the community — such as transportation, housing and access to food or other" received the least number of responses (5). • The poll results suggest that out of 163 responses provided by 72 individuals, "access to healthy foods" (40 responses) and "economic development" (34 responses) were the two top areas reported by the meetings' attendees. Environmental quality received the least number of responses (6 responses). • Fifty-five percent of respondents reported that the main incentive for their hospital was to "improve the health of the community." Several respondents indicated that improving the health of the community would help them to address high rates of readmissions, high costs of care and unnecessary emergency room utilization (3 respondents). • Out of 139 responses provided by 83 individuals, "available funding" (55 responses) and "current reimbursement structures" (52 responses) were identified as two main challenges by the respondents. In the meantime, "lack of leadership buy-in" received the least number of responses (3 responses).	Hospitals could consider: • Identifying innovative local practices for funding population health efforts. • Developing cross-sector partnership to achieve sustainable impact. Organizations interested in supporting hospitals in population health work could consider • Assisting hospitals in identifying opportunities for implementing population health activities in the areas of "housing" and "environmental quality."

Detailed results are described in *Figures 18−21* (pages 87–93) and represent findings from all six district meetings.

Overview

Between April 1 and April 20, 2018, KHI attended six district hospital meetings, convened by the Kansas Hospital Association (*Figure 16*). These meeting were attended by representatives from 79 hospitals. Primarily, hospital attendees were chief executive officers (CEOs). *Figure 17* (page 85) provides an overview of all meeting attendees.

Figure 16. **Location of KHA District Meetings**



Source: Kansas Hospital Association, 2018.

Figure 17. **Attendees of KHA Spring 2018 District Meetings**

	Spring 2018						
	NE	SE	NC	SC	NW	SW	**total**
Hospitals	11	7	18	14	16	13	**79**
Members	16	10	25	22	27	18	118
Staff	10	4	6	5	6	6	37
Sponsors	3	2	2	3	2	1	13
Total	*29*	*16*	*33*	*30*	*35*	*25*	*168*

Source: Kansas Hospital Association, 2018.

The meetings presented KHI with a valuable opportunity to enhance the understanding of population health by hospitals and health systems and capture their interest and current activities in population health. To achieve these goals, KHI delivered a presentation titled: *"Population Health or Community Health: Definitions, Trends and Needs*." KHI also collaborated with KHA to administer several polls. The polls were created and launched using Poll Everywhere, an online platform that supports live interactive audience participation. The purpose of the polls was to inform the development of a survey for hospitals.

Polls

A total of four polls related to population health were administered during each district meeting. Each attendee from the hospitals was asked to reply to the polls by using their cell phone or other electronic device. The attendees provided their answer by sending a text message to the number provided by KHA or by clicking on the customized link. All polls included multiple choice questions. The polls did not include any open-ended questions.

Each participant was asked to respond one time to each poll. However, the participants could undo and re-submit their responses. The responses were anonymous. For two out of four poll questions, the respondents could choose up to two answers. For one question, the respondents were asked to provide one answer, and for the last question they were asked to select "all that apply."

After the poll closed, the results were displayed on the screen (as a bar or a pie chart). To learn more about the results, the KHI staff member led a brief discussion where participants provided additional insights to their poll responses and reactions to the poll results. The information provided by participants in this discussion was summarized by KHI staff.

Limitations

Although, only participants from the hospitals were asked to respond to the polls, other attendees (e.g., staff, sponsors) could have provided their answers as well. In addition, some hospitals had more than one representative at the meeting. As a result, the number of respondents represents the number of individuals responding to each poll rather than the number of hospitals in attendance at the district meetings.

Finding 1.

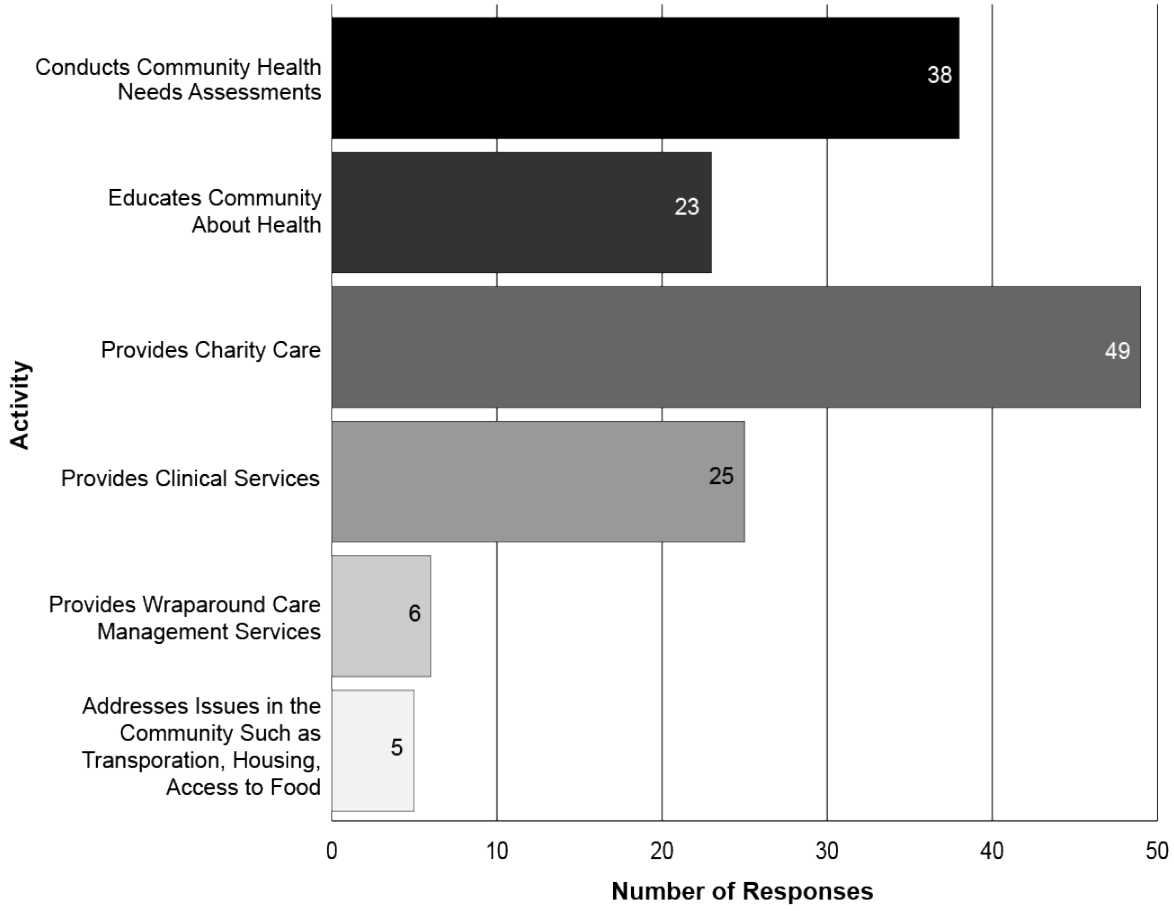
For the first poll, meeting attendees were asked to select up to two activities that their hospital or health system engage in most often as part of their community or population health work. The attendees could select up to two options from the following six options: conduct Community Health Needs Assessments (CHNAs), provide charity care, provide wraparound care management services, educate community about health, provide clinical services and address issues in the community, such as transportation, housing, access to food or other. Eighty-three individuals participated in this poll and provided 146 responses.

The meetings' attendees reported "providing charity care" (49 responses) and "conducting Community Health Needs Assessments" (38 responses) as the top two, most frequent activities that hospitals engage as part of their community or population health work. "Addressing issues in the community — such as transportation, housing and access to food or other" received the least number of responses (5 responses). (*Figure 18*, page 87)

> "We have the responsibility to serve those who can't afford care."
>
> - Hospital representative

Several attendees offered a few insights about the findings. They noted that the "providing charity care" and "conducting community health needs assessments (CHNA)" were identified as the top two activities due to the Internal Revenue Service (IRS) requirements for many hospitals. However, one attendee also saw CHNA as an opportunity to learn more about their community and the needs of their residents. In addition, two attendees suggested that "providing charity care" was part of the mission and tradition as an organization. Finally, a few attendees emphasized that community demographics, specifically having a large number of individuals who are impoverished and unable to pay their hospital bills, often drive hospital focus on charity care.

Figure 18. **When You Think About Community Health or Population Health Work, Which Activities Does Your Hospital Engage in Most Often? (Select up to two) (146 responses from 83 respondents).**



Note: Respondents = 83. Respondents could provide up to two responses.

Source: Kansas Health Institute (2019). The Role of Hospitals in Population Health: Findings from Statewide Survey and Local Perspectives.

Finding 2.

For the next poll (*Figure 19*, page 89), the participants were asked to select health determinant areas in which their hospital or health system has implemented efforts that focus beyond patients. The attendees could select all that apply. The areas included housing, transportation, employment, environmental quality, K-12 education, access to healthy foods and economic development. Seventy-two individuals participated in this poll and provided 163 responses.

The poll results suggest that "access to healthy foods" (40 responses) and "economic development" (34 responses) were the two top areas reported by the meetings' attendees. "Environmental quality" received the least number of responses (6 responses).

The respondents were asked to provide examples of hospital efforts in the areas included in the poll. The respondents highlighted activities for six out of seven areas. In addition, they provided one example related to a physical activity. There were no examples focusing on environmental quality. The examples of activities are listed below.

Access to Healthy Foods

- Provide free lunches to children during summer and when school is out (3 respondents).
- Provide meals on wheels for elderly (2 respondents).
- Provide nutrition education (2 respondents).
- Support farmers market (2 respondents).
- Facilitate cooking classes (1 respondent).
- Provide pre-sale food baskets of fresh produce (1 respondent).
- Develop greenhouse (1 respondent).

Economic Development/Employment

- Serve on economic development councils (4 respondents).
- Offer financial and employment advice to single parent households (1 respondent).
- Implement living wage programs for employees at the hospital (1 respondent).

K-12 Education

- Support skills training programs for high school students (2 respondents).
- Support school garden (1 respondent).

Transportation

- Provide transportation for individuals to access health care services (3 respondents).
- Provide transportation to kids during school year (1 respondent).

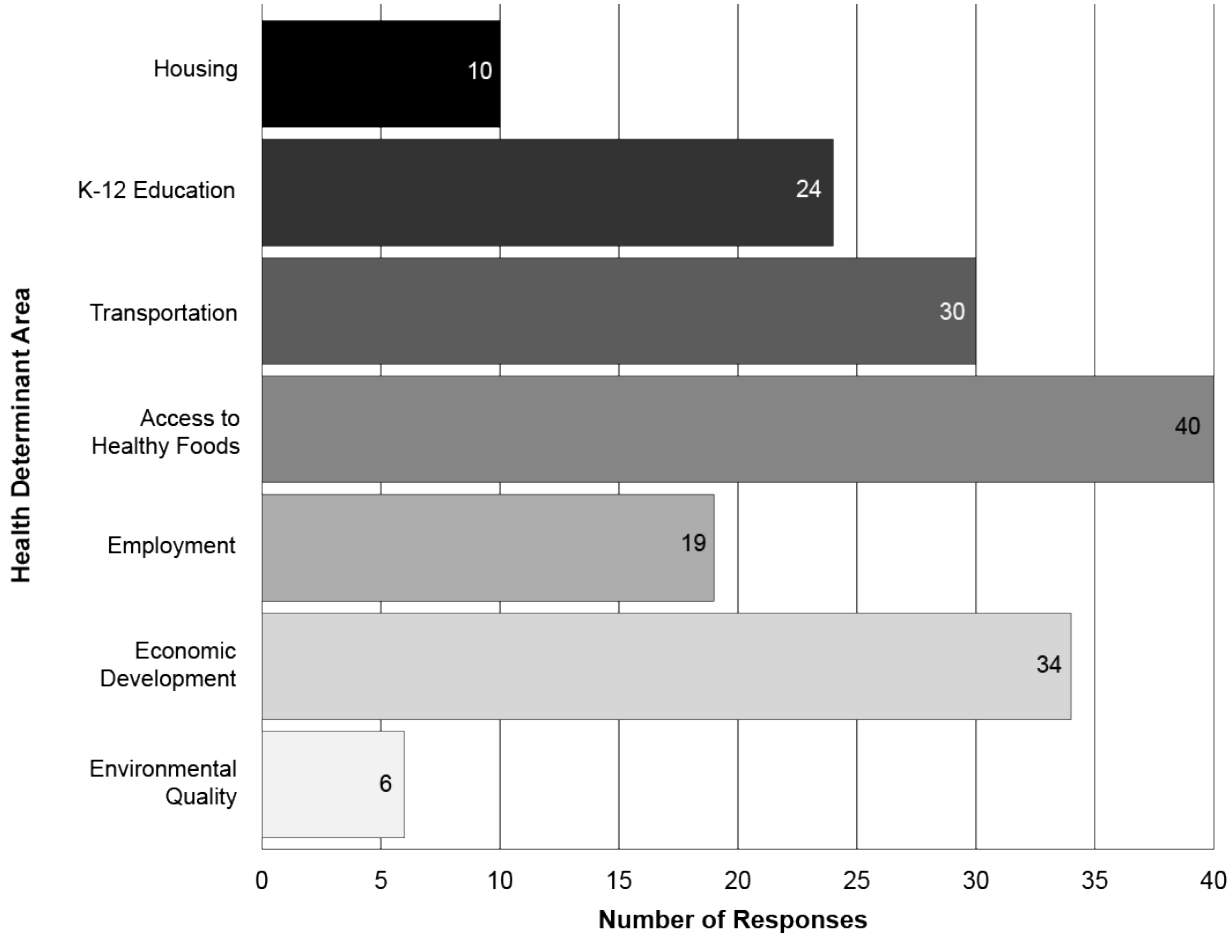
Housing

- Support the development of affordable housing (3 respondents).

Physical Activity

- Assess and map sidewalks and bike trails (2 respondents).

Figure 19. **In Which of the Following Health Determinant Areas Has Your Hospital or Health System Implemented Efforts that Focus on Populations Beyond Patients? (Choose all that apply) (163 responses from 72 respondents).**



Note: Respondents = 72. Respondents could provide up to seven responses.

Source: Kansas Health Institute (2019). The Role of Hospitals in Population Health: Findings from Statewide Survey and Local Perspectives

Finding 3.

The third poll (*Figure 20*, page 91) focused on understanding the primary incentive for hospitals to engage in community or population health. Eighty-two attendees participated in this poll. Fifty-five percent of respondents reported that the main incentive for their hospital was to “improve the health of the community.” Several respondents indicated that improving the health of the community would help them to address high rates of readmissions, high costs of care and unnecessary emergency room utilization (3 respondents). Another respondent noted that improving the health of the community was part of their hospital mission and “was the right thing to do.”

The respondents also provided their thoughts regarding the list of incentives included in the poll as well as suggested a few additional incentives that could facilitate their engagement in population health.

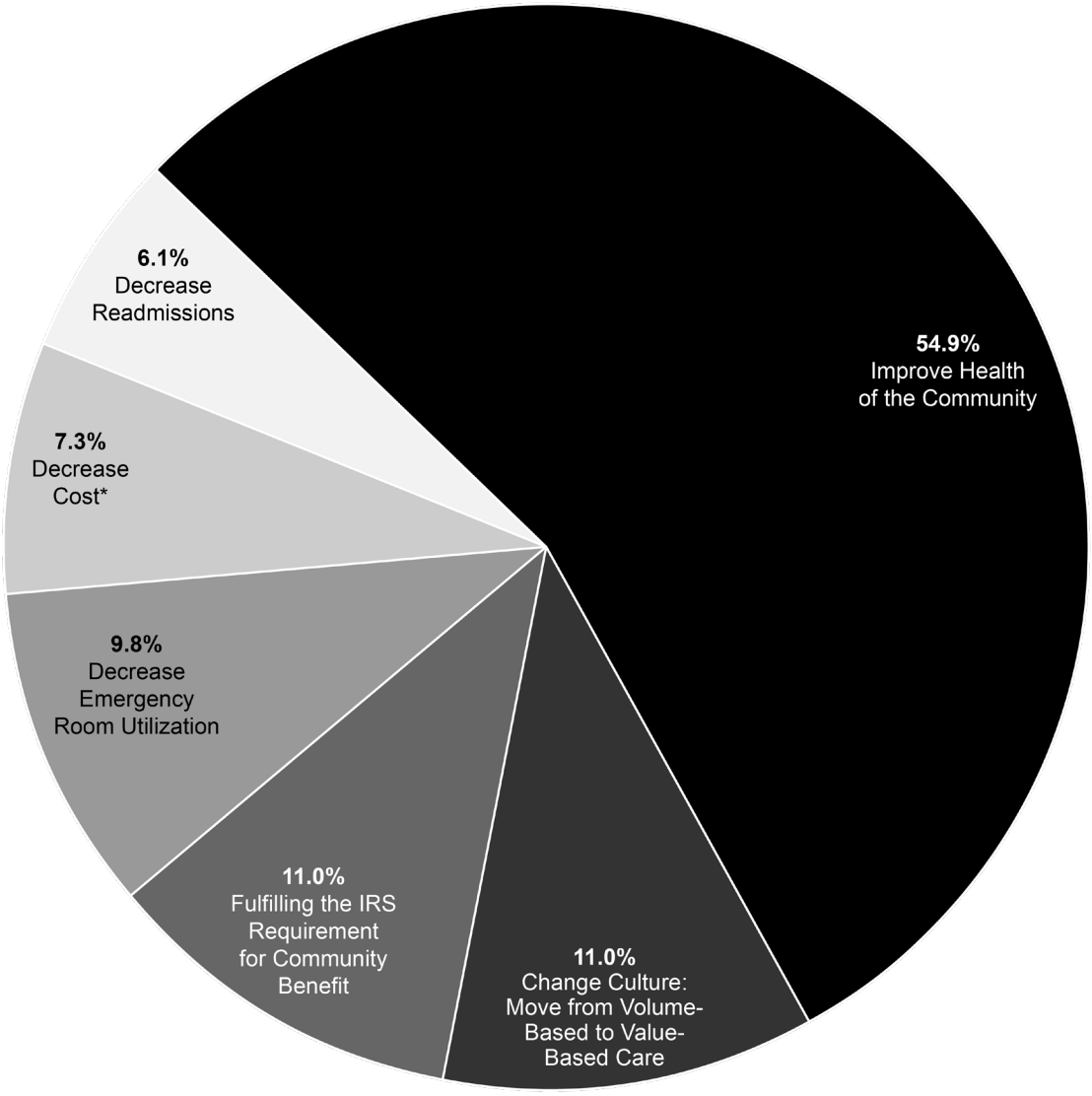
Incentives Included in the Poll

- Decrease cost of care could help people to be less reluctant to seek care (2 respondents).
- Improve the health of the community is part of organizational mission (2 respondents).
- IRS requirements create hard deadline and make it (population health) a priority (1 respondent).
- Change culture - accommodate patients with different needs vs. "rotating patients as quickly as possible" (1 respondent).

New Incentives

- Provide more incentive for hospitals rather than penalties - such as IRS penalties (1 respondent).
- “Keep the doors open” (1 respondent).

Figure 20. **What is the Primary Incentive for Hospitals to Engage in Community or Population Health Work? (n=82 respondents).**



Note: Respondents = 82.

*Decrease cost was added after the first (Northeast) district meeting. Responses for decrease cost apply only to the remaining five district meetings.

Source: Kansas Health Institute (2019). The Role of Hospitals in Population Health: Findings from Statewide Survey and Local Perspectives

Finding 4.

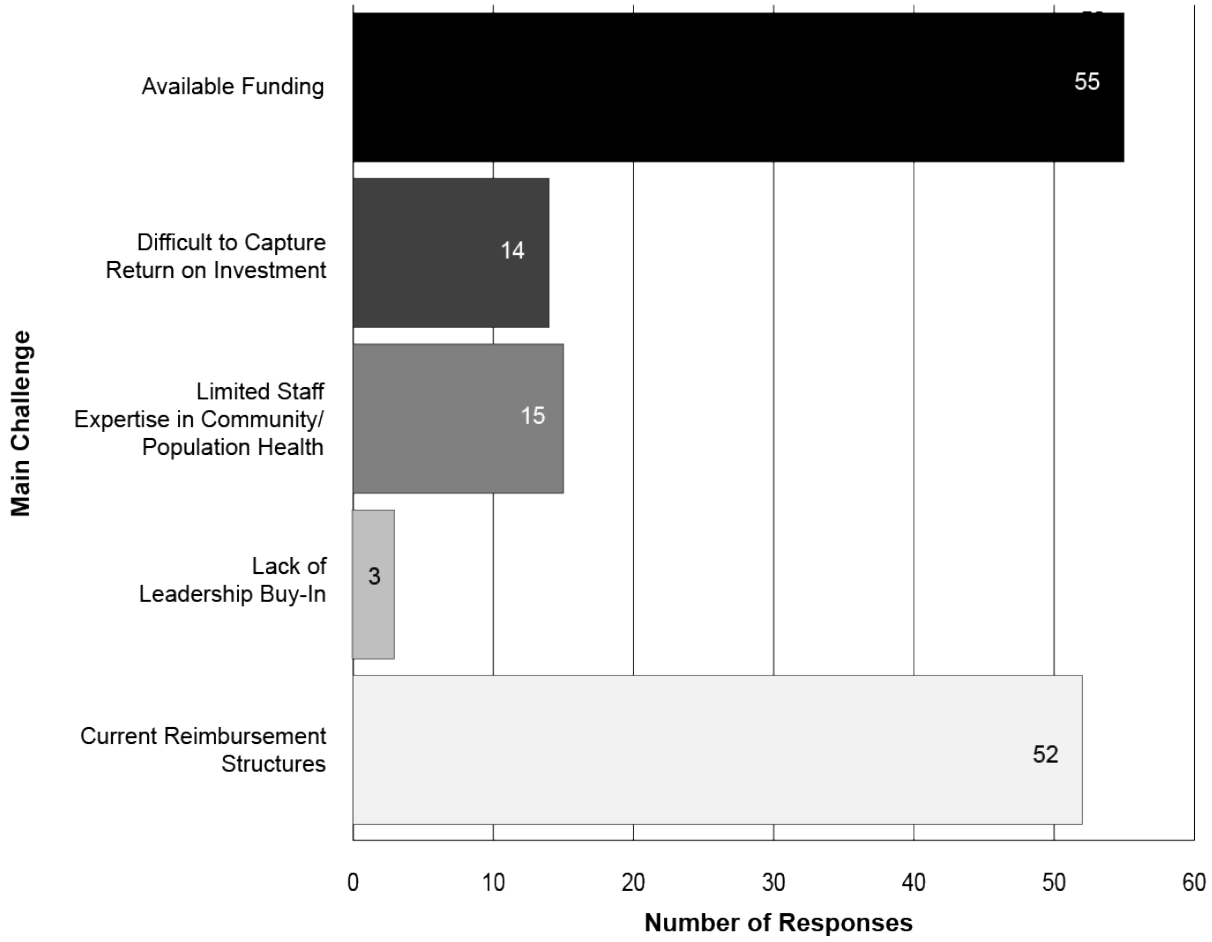
Finally, the last poll (*Figure 21*, page 93) asked attendees to identify up to two challenges for engaging in community or population health work. Eighty-three individuals participated in this poll and provided 139 responses. “Available funding” (55 responses) and “current reimbursement structures” (52 responses) were identified as two main challenges by the respondents. In the meantime, “lack of leadership buy-in” received the least number of responses (3). KHI would like to note that this finding may have been influenced by who was in the room, as primarily only hospital executives/leaders were there.

Several respondents indicated that that current reimbursement model does not support population health work and that the current payment structures are not set up to keep populations healthy. As a result, two respondents noted that "working on population health is against self-interest in the current culture.” Another challenge brought up by the respondents was that most of funding for the population health work come from grants (1 respondent). Grant funding for population health work was associated with two main issues — funding was perceived as being time-limited and for a specific scope of work. One respondent provided an example that highlighted that a hospital might have grant funding to develop a trail but no funds to get people to the trail.

Other challenges referenced by the respondents included:

- Lack of staff education, training and tools to tackle population health (2 respondents).
- The need to focus on a few key priorities due to limited resources and time (1 respondent).
- Perception that population health work seems to produce low or no return on investment (1 respondent).

Figure 21. **What Are the Main Challenges for Engaging in Community Health/Population Health Work? (Select up to two) (139 responses from 83 respondents).**



Note: Respondents = 83. Respondents could provide up to two responses.

Source: Kansas Health Institute (2019). The Role of Hospitals in Population Health: Findings from Statewide Survey and Local Perspectives

Conclusion

At district meetings, hospital leadership provided information on the types of population health activities their hospitals engage in as well as efforts implemented for their community — beyond their patient populations — related to the social determinants of health.

According to poll participants, Kansas hospitals primarily conduct community health needs assessments and provide charity care as part of their population health activities. When hospitals have engaged in population health activities, it is most frequently related to access to food and economic development.

Hospital leadership also discussed the incentives and challenges they encounter as they engage in population health. Hospital leadership expressed a great interest in population health activities as many of them saw population health as part of their organizational mission. Lastly, when hospitals have invested in population health they have encountered challenges related to the consistent funding of these efforts.

Survey of Kansas Hospitals

Findings	Recommendations
• One-third (33.3 percent) of respondents reported their organization had a specific individual responsible for population health. • However, 57.9 percent reported their organization did not have a specific individual. • Three-quarters (75.4 percent) reported they had a clear understanding of the term public health and almost three quarters (73.7 percent) had a clear understanding of the term community health. • Slightly more than half (50.9 percent) agreed they had a clear understanding of the term population health management and 57.9 percent had a clear understanding of the term population health. • Three-quarters (75.5 percent) of respondents agreed or strongly agreed their organization should focus on addressing the health of populations beyond basic patient care, whereas only 5.3 percent disagreed. • A majority (ranging from 56.1 percent to 98.2 percent) of respondents indicated that their organization was extremely or moderately aware of their community's needs across all areas. • The highest level of awareness (extreme and moderate) was for "access to care" which was nearly universal (98.2 percent). • The lowest level of awareness was reported for "environmental quality in the community" with more than half (56.1 percent) of respondents reporting extreme or moderate awareness.	Organizations interested in supporting hospitals in population health work could consider: • Assisting hospitals/health systems in reaching a common understanding of the term "population health." Specifically, organizations could help hospitals differentiate between "population health" and "population health management." • Developing and co-delivering (e.g., in collaboration with a state hospital association) a population health training to hospitals across the state.

Survey of Kansas Hospitals (continued)

Findings	Recommendations
• Respondents reporting that their organization should be involved to address issues in the community differed across areas. • Almost all respondents thought their organization should be involved (to a great or moderated extent) to address "access to care" (98.2 percent), while only 17.6 percent of respondents thought their organizations should be involved in "housing." • Among the incentives for engaging in population health activities, "improve health of the community" and "decrease admissions" ranked highest. • The greatest challenges identified by the respondents were "available funding" and "current reimbursement structures." • The tools or resources needed most were "help to identify funding sources" and "provide training to hospital staff."	

Overview

The goal of the survey was to better understand the efforts of Kansas hospitals in the area of population health, including definitions of population health, strategies utilized, benefits and challenges. This survey provides valuable information to hospitals, health systems and stakeholders that can be used to identify and develop strategies for advancing population health efforts as well as needed resources. The survey was developed by KHI with feedback by KHA to best capture information about population health work in Kansas hospitals. The survey contained 26 questions and included skip logics to allow respondents to provide more information only for relevant areas.

The survey includes four main domains:

- Hospital characteristics including population health resources (staffing and allocations), hospital district, and number of acute licensed beds.

- The understanding, awareness, and views toward population health and activities.
- Population health engagement areas and specific activities (activated by hospital population health engagement area selections).
- Incentives and barriers for hospital's engagement in population health.

Survey Responses

Of the 124 surveys administered, there were 88 responses as of June 10, 2018. After review of the records, only surveys with a completion rate of 97 percent or higher were retained. No survey with less than 97 percent completion had hospital characteristic (e.g., hospital region, acute licensed bed count) information available. This left 60 surveys that had completed at least 97 percent of the survey. Of those surveys excluded, completion rates ranged from 0 to 75 percent with most completion rates falling below 50 percent. The denominator is lower for some questions based on if the question had a skip logic that reduced the number answering a follow-up component or if some respondents did not answer that question.

Furthermore, three survey respondents did not answer any questions in the survey even though they read through at least 97 percent of the survey and closed out. Based on this information analyses were modified to have a maximum denominator of 57 instead of 60. A response count of 57 out of 124 produces a confidence interval (at 95 percent confidence) of ±9.58 percent, meaning that there is a 95 percent chance that the responses of all 124-member hospitals would fall within ± 9.58 percent of the responses provided by the sample.

Therefore, the final count of survey respondents was 57 for the analysis. Due to the anonymous nature of the survey, we cannot identify potential duplicate survey responses. Therefore, we are unable to calculate the response rate for the survey. If we assume that the 57 responses are unique, then the response rate is roughly half (46.0 percent). However, the rate might be lower.

Survey Results

Hospital Characteristics

Key Finding

- The distribution of survey respondents by geographic region and the number of acute license beds was similar to that of KHA members. The largest difference is for hospitals with 26-49 beds (10.5 percent for respondents and 15.6 percent for KHA members).

KHA Hospital Regions

Of the 57 survey respondents, 29.8 percent of respondents reported the Northeast KHA Hospital district, 21.1 percent reported the South Central district. The remaining districts (Northwest, North Central, Southwest and Southeast) each had 12.3 percent, respectively (*Figure 22).*

This is compared to the percentages for member hospitals reported by KHA, with 25.8 percent for the Northeast district, 24.2 percent for the South Central district, 14.5 percent for the Northwest and Southwest districts, respectively, 11.3 percent for the North Central district, and 9.7 percent for the Southeast district. However, as mentioned before, we cannot ascertain that each hospital only responded to the survey once because of the anonymous nature of survey. Therefore, we did not conduct any statistical comparisons between characteristics of survey respondents and KHA members.

Figure 22. **Hospital Counts by KHA Hospital District**

District	Survey Response Count	%	KHA Member Count	%
Northwest	7	12.3%	18	14.5%
Southwest	7	12.3%	18	14.5%
North Central	7	12.3%	14	11.3%
South Central	12	21.1%	30	24.2%
Northeast	17	29.8%	32	25.8%
Southeast	7	12.3%	12	9.7%
Sum	**57**	**100.0%**	**124**	**100.0%**
Not Applicable	3		-	

Note: KHA member count is information provided directly by KHA.
Source: KHI and KHA 2018 Population Health Survey of Kansas Hospitals.

KHA Acute Licensed Bed Counts

For acute license bed counts, 66.7 percent of respondents reported 25 beds or fewer, 10.5 percent reported 26-49 beds, 7.0 percent reported 50-99 beds and 15.8 percent reported 100 or more beds (*Figure 23*). From number reported by KHA, 63.1 percent of member hospitals had 25 beds or fewer, 15.6 percent had 26-49 beds, 7.4 percent had 50-99 beds, and 13.9 percent had 100 or more beds.

Figure 23. **Hospital Counts by Acute Licensed Bed Numbers**

Number of Acute License Beds	Survey Response Count	%	KHA Member Count	%
25 and under	38	66.7%	77	63.1%
26-49	6	10.5%	19	15.6%
50-99	4	7.0%	9	7.4%
100 and over	9	15.8%	17	13.9%
Sum	**57**	**100.0%**	**122**	**100.0%**
Not Applicable	3	-	2	-

Note: KHA member count is information provided directly by KHA.

Source: KHI and KHA 2018 Population Health Survey of Kansas Hospitals.

Respondents Indicating Their Organization Had Specific Population Health Staff

Key Findings

- One-third (33.3 percent) of respondents reported their organization had a specific individual responsible for population health.
- However, 57.9 percent reported their organization did not have a specific individual.
- Of respondents, 8.8 percent reported they were unsure (*Figure 24*).

Figure 24. **Does Your Organization Have Specific Individuals Who Are Accountable for Advancing Your Hospital's Population Health Work?**

Response	Count	%
Yes	19	33.3%
No	33	57.9%
Unsure	5	8.8%
Sum	**57**	**100.0%**
Not Applicable	3	-

Source: KHI and KHA 2018 Population Health Survey of Kansas Hospitals.

Understanding of Population Health Terms and Definitions

Key Findings

- Three-quarters (75.4 percent) reported they had a clear understanding of the term "public health" and almost three-quarters (73.7 percent) had a clear understanding of the term "community health."
- Slightly more than half (50.9 percent) agreed they had a clear understanding of the term "population health management" and 57.9 percent had a clear understanding of the term "population health."

However, the percentages of those with a clear understanding of the "population health" and "population health management" concepts were much lower than those for the "public health" and "community health" concepts. Of those that did not say they had a clear understanding, most reported they had a "neutral" understanding of terms, which we interpret as respondents providing no response instead of indicating they did not have a clear understanding (*Figure 25*).

Figure 25. **To What Extent Do You Agree With This Statement? "I Have a Clear Understanding of What Each of These Terms Mean."**

Response	Population Health	%	Community Health	%	Population Health Management	%	Public Health	%
Agree	33	57.9%	42	73.7%	29	50.9%	43	75.4%
Disagree	8	14.0%	3	5.3%	7	12.3%	2	3.5%
Neutral	16	28.1%	12	21.1%	21	36.8%	12	21.1%
Sum	**57**	**100.0%**	**57**	**100.0%**	**57**	**100.0%**	**57**	**100.0%**
Not Applicable	3	-	3	-	3	-	3	-

Source: KHI and KHA 2018 Population Health Survey of Kansas Hospitals.

Focus and Impact

Key Findings

- Three-quarters (75.5 percent) of respondents agreed or strongly agreed their organization should focus on addressing the health of populations beyond basic patient care, whereas only 5.3 percent disagreed.

A large number of respondents either strongly agreed (31.6 percent) or agreed (43.9 percent) that their organization should focus on addressing health of populations beyond their patients. However, 19.3 percent of respondents indicated that they were neutral on the issue and 5.3 percent indicated they disagreed. No respondents indicated that they strongly disagreed (*Figure 26)*.

Figure 26. **To What Extent Do You Agree That Your Organization Should Focus on Addressing the Health of Populations Beyond Its Patients (e.g., populations in the community)?**

Response	Count	%
Strongly Disagree	0	0.0%
Disagree	3	5.3%
Neutral	11	19.3%
Agree	25	43.9%
Strongly Agree	18	31.6%
Sum	**57**	**100.0%**
Not Applicable	3	-

Source: KHI and KHA 2018 Population Health Survey of Kansas Hospitals.

Awareness and Involvement

Key Findings

- A majority (ranging from 56.1 percent to 98.2 percent) of respondents indicated that their organization was extremely or moderately aware of their community's needs across all areas.
- The highest level of awareness (extreme and moderate) was for "access to care" which was nearly universal (98.2 percent).
- The lowest level of awareness was reported for "environmental quality in the community" with slightly more than half (56.1 percent) of respondents reporting extreme or moderate awareness.
- Respondents reporting that their organization should be involved to address issues in the community differed across areas.

- Almost all respondents thought their organization should be involved (to a great or moderated extent) to address “access to care” (98.2 percent), while only 17.6 percent of respondents thought their organizations should be involved in housing.

- A majority (ranging from 56.1 percent to 98.2 percent) of respondents indicated that their organization was extremely or moderately aware of their community’s needs across all areas. Please note that respondents reporting “Don’t know” are included in the denominator for calculating the percentages but are not presented as a category.

    - **Transportation**: A majority indicated that they were extremely (43.9 percent) or moderately (33.3 percent) aware of community needs in the area of “transportation.” However, others indicated that they were slightly (17.5 percent) or not at all aware (1.8 percent).

    - **Housing:** A majority indicated that they were moderately (50.9 percent) or extremely (26.3 percent) aware of community needs in the area of “housing” while (17.5 percent) indicated that they were slightly aware. No respondents indicated that they were not aware at all of community needs in this area.

    - **Early Childhood−12th Grade Education**: A majority indicated that they were extremely (54.4 percent) or moderately (22.8 percent) aware of community needs in the area of “early childhood.” Less than 16 percent (15.8 percent) indicted that they were slightly or not at all (3.5 percent) aware.

    - **Community Workforce (Employment):** A majority indicated that they were moderately (49.1 percent) or extremely (28.1 percent) aware of community needs in the area of “community workforce (employment)” while (15.8 percent) reported that they were slightly aware. No respondents indicated that they were not aware at all of community needs in this area.

    - **Access to Healthy Food:** A majority indicated that they were moderately (57.9 percent) or extremely (26.3 percent) aware of community needs in the area of “access to healthy food” while (12.3 percent) indicted that they were slightly or not at all aware (1.8 percent).

    - **Access to Physical Activity:** A majority indicated that they were moderately (52.6 percent) or extremely (40.4 percent) aware of community needs in the area of

"access to physical activity" while (5.3 percent) indicated to be slightly aware. No respondents indicated that they were not aware at all of community needs in this area.

- **Access to Health Care:** A majority indicated that they were extremely (56.1 percent) or moderately aware (42.1 percent) community needs in the area of "access to healthcare." Less than 2 percent (1.8 percent) indicate that they were slightly aware. No respondents indicated that they were not aware at all of community needs in this area.

- **Economic Development:** A majority indicated that they were moderately (47.4 percent) or extremely aware (24.6 percent) community needs in the area of "economic development." Less than 16 percent (15.8 percent) indicated that they were slightly aware. No respondents indicated that they were not aware at all of community needs in this area.

- **Environmental Quality in the Community:** A majority indicated that they were moderately (42.1 percent) or extremely (14.0 percent) aware while (14.0 percent reported being slightly (14.0 percent) or not at all (1.8 percent) aware.

- While a majority indicated that their organization was aware of needs across all areas, those that thought their organization should address these areas differed by issue. Respondents reporting "Don't know" are included in the denominator but are not presented as a category.

  - **Transportation.** A majority (54.4 percent) agreed that they thought their organization should address this issue to a great (10.5 percent) or moderate (43.9 percent) though just under a third thought that their organization should only address transportation to a small extent (26.3 percent) or not at all (5.3 percent).

  - **Housing.** A majority (64.9 percent) agreed that their organization should address "housing" to a small extent (47.4 percent) or not at all (17.5 percent). Less than two in 10 (17.6 percent) agreed that "housing" should be addressed to a great (1.8 percent) or moderate (15.8 percent) extent.

  - **Early Childhood−12th Grade Education.** Reponses were fairly evenly split (43.9 percent vs. 45.6 percent) between those that thought that "early childhood−12th

grade education" should be addressed to a great (5.3 percent) or moderate (38.6 percent) extent and those that thought that it should only be addressed to a small extent (28.1 percent) or not at all (17.5 percent).

- **Community Workforce (Employment).** A majority (56.1 percent) thought that their organization should address "community workforce (employment)" to a great (7.0 percent) or moderate extent (49.1 percent) while more than a third (36.8 percent) felt that their organization should only address community workforce to a small extent (29.8 percent) or not at all (7.0 percent).

- **Access to Healthy Food.** A majority (70.2 percent) thought that their organization should address "access to healthy food" to a great (28.1 percent) or moderate (42.1 percent) extent while around one quarter (22.9 percent) thought that their organization should address this area to a small extent (21.1 percent) or not at all (1.8 percent).

- **Access to Physical Activity.** The majority (80.4 percent) thought that their organization should address "access to physical activity" to a great (37.5 percent) to moderate (42.9 percent) extent while 14.3 percent felt that they should only address the area to a small extent (12.5 percent) or not at all (1.8 percent).

- **Access to Health Care.** Of respondents that did not answer "Don't Know", all responded that their organization should address "access to health care" to a great extent (84.2 percent) or to a moderate extent (14.0 percent).

- **Economic Development.** The majority (61.4 percent) responded that they thought their organization should address "economic development" to a great (12.3 percent) or moderate (49.1 percent) extent while about one in four (24.6 percent) reported that their organization should address this area only to a small extent. No respondents indicated that this area should not be addressed at all.

- **Environmental Quality in the Community.** The majority (59.6 percent) responded that they thought that their organization should engage in "environmental quality in the community" to a great (10.5 percent) or moderate (49.1 percent) extent while about two in 10 (21.1. percent) thought their organization should address the area to a small extent (19.3 percent) or not at all (1.8 percent).

Incentives, Challenges and Tools

Key Findings:

- Among the incentives for engaging in population health activities, "improve health of the community" and "decrease admissions" ranked highest.
- The greatest challenges were "available funding" and "current reimbursement structures."
- The tools or resources needed most were "help to identify funding sources" and "provide training to hospital staff."

Incentives

For the eight possible rank items ("other" was excluded) in *"incentives to address social and economic factors and focus on populations beyond patients,"* the strongest incentive for respondents was "improve health of the community" (summary score: 317; average rank: 6.1) and the least incentive was "fulfill the IRS requirement for community benefit" (summary score: 104; average rank: 2.0). *Figure 27* provides more detailed statistics for the distribution of ranking for each item.

Figure 27. **Incentives to Address Social and Economic Factors and Focus on Populations Beyond Patients**

Incentive	Summary Score	Average Rank	Median Rank	Mode
Improve health of the community	317	6.1	4	8
Decrease readmissions	266	5.2	5	5
Decrease uncompensated care	252	4.8	5	6,4
Decrease Emergency Room Utilization	249	4.8	5	3
Decrease cost	238	4.6	5	3
Attract and retain population in the community	236	4.5	5	8,1
Move from volume-based to value-based care	208	4.0	4	2
Fulfill the IRS requirement for community benefit	104	2.0	1	1

Note: Incentives were ranked by 52 respondents and coded from 1 (lowest) to 8 (highest) for the analysis. Summary Scores were calculated by multiplying the rank by the number of responses. The maximum possible summary score is 416 (strongest incentive) and the minimum is 52 (lowest incentive).

Source: KHI and KHA 2018 Population Health Survey of Kansas Hospitals.

Challenges

For the six possible rank items (other was excluded) in "challenges for addressing social and economic factors (e.g., housing, transportation, poverty, education) and focusing on population(s) beyond patients", "available funding" was the most challenging area for respondents (summary score: 271; average rank: 5.2) and "navigating regulations related to social and economic factors" was the least challenging area (summary score: 104; average rank: 2.0). *Figure 28* provides more detailed statistics for the distribution of ranking for each item.

Figure 28. **Challenges for Addressing Social and Economic Factors**

Challenges	Summary score	Average Rank	Median Rank	Mode
Available funding	271	5.2	5.5	6
Current reimbursement structures	214	4.1	4.0	5
Difficult to capture return on investment	193	3.7	3.5	3
Limited staff expertise in working on community issues and on population beyond patients	185	3.6	4.0	4
Lack of stakeholder buy-in	127	2.5	2.0	2
Navigating regulations related to social and economic factors	104	2.0	1.0	1

Note: Challenges were ranked by 52 respondents and coded from 1 (lowest) to 6 (highest) for the analysis. Summary Scores were calculated by multiplying the rank by the number of responses. The maximum possible summary score is 312 (strongest incentive) and the minimum is 52 (lowest incentive).

Source: KHI and KHA 2018 Population Health Survey of Kansas Hospitals.

Tools

For the seven possible rank items (other was excluded) in "what tools, resources, or technical assistance do you need for increasing the work of your organization toward improving population health", "helping to identify funding sources" was the area that respondents need help the most (summary score 284; average rank: 5.4) and "develop peer networking between hospitals that engage in population health work" was the area requiring help the least (summary

score: 119; average rank: 3.3). *Figure 29* provides more detailed statistics for the distribution of ranking for each item.

Figure 29. **Tools, Resources or Technical Assistance Needed for Increasing the Work of Your Organization Toward Improving Population Health**

Tools	Summary Score	Average Rank	Median Rank	Mode
Help to identify funding sources	284	5.4	5	7
Provide training to hospital staff	258	4.9	5	7,6,5
Help to identify public health strategies	256	4.8	5	6
Assistance with understanding how to link clinical data with population health data	213	4.0	4	5
Share evidence-based practices from KS and other states	175	3.3	3	3
Foster buy-in internally and externally	174	3.3	3	1
Develop peer networking between hospitals that engage in population health work	119	3.3	3	1

Note: Tools, resources and technical assistance were ranked by 53 respondents and coded from 1 (lowest) to 7 (highest) for the analysis. Summary Scores were calculated by multiplying the rank by the number of responses. The maximum possible summary score is 371 (strongest incentive) and the minimum is 53 (lowest incentive).

Source: KHI and KHA 2018 Population Health Survey of Kansas Hospitals.

Implementation

Key Findings:

- Slightly below half (44.6 percent) responded that they engaged in 4 or 5 of the possible 9 population health areas and 19.7 percent were engaged in 6 or more areas (*Figure 30,* page 108).
- Only three areas were engaged by over half of respondents.

On average, respondents reported that their organizations engaged in about 4 activities on average (mean: 4.2) of 9 possible population health areas.

Almost all respondents (98.2 percent) said they had implemented efforts in “access to health care,” followed by “access to physical activity” (73.2 percent), “access to healthy food” (51.8 percent), “transportation” (46.4 percent), “community workforce (employment)” (44.6 percent), “economic development” (41.1 percent), “early childhood−12th grade education” (35.7 percent) and “housing” and “environmental quality in the community” (12.5 percent, respectively).

Figure 30. **KHI Summary: Count of Areas Engaged in Reported by Respondents (possible range of areas: 1 to 9)**

Number of Areas Engaged	Count	%
1	3	5.4%
2	8	14.3%
3	9	16.1%
4	12	21.4%
5	13	23.2%
6	7	12.5%
7	2	3.6%
8	0	0.0%
9	2	3.6%
Sum	**56**	**100.0%**
NA	4	-

Source: KHI and KHA 2018 Population Health Survey of Kansas Hospitals.

Appendix A. Literature Review

Inclusion Criteria

- **Date:** In general, articles reviewed were published between 2012−2018. However, the literature review also included a few key articles published before 2012.
- **Country:** United States
- **Language**: English
- **Type of publication**: Journal articles, dissertations, theses, research institute reports, issue briefs
- **Sources of information**: Academic databases, government websites such as the Centers for Disease Control and Prevention (CDC), websites of relevant professional associations (e.g., American Hospital Association [AHA]), websites of national foundations (e.g., Robert Wood Johnson Foundation [RWJF]).

Exclusion Criteria

Excluded articles included those that did not meet the inclusion criteria above, were repeat hits, or were referenced by comprehensive literature reviews. If 50 consecutive hits were viewed without a relevant article, the search ended.

Steps for the Literature Review Process

Figure A-1: **Literature Review Process**

Steps (Narrative/Summary Review[1])
1. Determine keywords.
2. Conduct the search in each academic database using tools within the database to set inclusion criteria.
3. Conduct the search in each database and review the websites of key organizations, such as the American Hospital Association, the National Academy of Sciences, the Centers for Disease Control and Prevention, and the Robert Wood Johnson Foundation for information relevant to each research question.
4. Review titles/abstracts by exclusion criteria, eliminating hits that do not relate to the search topic.
5. Capture titles and abstracts.
6. Download full-text of remaining articles.
7. Read and code each article.
8. As needed, review the citations in each of the articles identified in the initial search for additionally relevant articles.
9. As needed, use Google Scholar “cited by feature” to find additional articles that cite the articles identified in the initial search.
10. Use coding table to write topic summary.

Source: KHI and KHA 2018 Population Health Survey of Kansas Hospitals.

[1] Narrative or summary reviews: tends to be mainly descriptive, does not involve a systematic search of the literature, and thereby often focuses on a subset of studies in an area chosen based on availability or author selection.

Figure A-2. **Research Questions and Initial Keywords**

NOTE: Only articles that use "population health" interchangeably with other terms (e.g., community benefit, community health, public health and other terms defined during question #2) were included in the review. Literature reviews were conducted for the questions shaded in blue, which were deemed to be the highest priority research questions.

#	Research Question	Initial Keywords
1.	What is the definition of population health?	"definition" AND "population health"; "term" AND "population health"; "meaning of population health"
2.	What terms have been used interchangeably with the "population health" term?	"terms" AND "interchangeably" AND "population health";
3.	What are the benefits to the hospital/health system when it addresses population health?	"hospital" AND "population health"; "health system" AND "population health"; "hospital" AND "community health"; "health system" AND "community health"; "hospital" AND "community benefit"; "health system" AND "hospital" AND "community/population health" AND "advantage"
4.	What are some barriers/challenges for hospitals/health systems engagement in population health?	"hospital/health system" AND "population/community health" AND "disincentives"; "hospital/health system" AND "population/community health" AND "challenges"; "hospital/health system" AND "population/community health" AND "barriers"; "hospital/health system" AND "population/community health" AND "obstacles"; "hospital/health system" AND "population/community health" AND "deterrents"
5.	What legal, administrative structures, policies, regulations, rules exist to support hospitals/health systems' engagement in population health?	"hospital/health system" AND "population/community health" AND "regulations"; "hospital/health system" AND "population/community health" AND "policy/ies"
6.	What are some examples/approaches/practices used by hospitals/health systems across the country to address population health? (beyond CHNAs/CHIPs)	"hospital/health system" AND "population/community health" AND "strategies"; "hospital/health system" AND "population/community health" AND "practices"

Source: KHI and KHA 2018 Population Health Survey of Kansas Hospitals.

Appendix B. Key Informant Interviews

Additional Information

Purpose of Qualitative Research for this Study

For this study, it was important to gather perspectives about population health activities from public health institutes, hospitals/health systems and other organizations/universities through qualitative research. These stakeholders, with their knowledge and expertise on the topic, provided insights and recommendations to inform this study. The results of the qualitative research also are being used to inform Kansas hospitals and other stakeholders about potential strategies that could meaningfully address population health.

Institutional Review Board Approval Process

The research project staff included Tatiana Y. Lin, M.A., Carlie Houchen, M.A., and Lawrence J. Panas, Ph.D. The team submitted a research plan and accompanying protocols to the Kansas Department of Health and Environment Institutional Review Board to ensure that the key-informant interviews met the human subjects' research requirements.

Data Collection Instruments

Interview Guide

Three interview guides were developed, one for each type of stakeholder organization (PHIs, hospitals/health systems, and other organizations/universities). The semi-structured interview guides were developed by the KHI project team and pilot-tested with KHI staff. They also were reviewed by the Kansas Hospital Association. The project team incorporated feedback as necessary and finalized the interview guides.

The interview guides were tailored to each group of stakeholders. For example, PHIs were asked about their rationale for working with hospitals to address population health, type of resources and services they provided to hospitals, and general thoughts about potential roles PHIs can play in supporting hospitals in this work. Hospitals were asked about their use and understanding of the term "population health," the extent to which population health was integrated in the hospital's culture and operation, the types of activities and projects they have initiated and their overall experience with implementing population health activities, including their successes, challenges and types of help they might need.

Informed Consent

The informed consent document, which was newly developed, outlined the purpose of the study, the benefits/risks of participation, and the contact information for the primary investigator. It also provided a description of the information that would be collected and how it would be used. It assured the interviewees that their responses would remain confidential and included information on how confidentiality would be maintained by the research staff.

The form discussed the voluntary nature of the project, assuring the participants they could decline to answer a question or stop the interview at any time. Oral consent was obtained over the phone prior to beginning the interview.

The interviewees also were informed that the written products (technical report and issue brief) summarizing the study results would list organizations that had been interviewed for the study. However, responses provided during the interviews would not be attributed to interviewees or their organizations, but rather would be included in an aggregate report of findings. KHI obtained approval from each organization to list their name in the written products.

All data collected from the interviews, including contact information, were saved on password protected computers. Personal identifiers (names, phone numbers, emails etc.) were collected in case there was a need to follow up with the study participants.

Interview Structure

Interviews were semi-structured, meaning each key informant was asked a set of standard questions — depending on each question's applicability — and follow-up questions were asked for clarity, understanding and additional information. Interviews were voluntary and confidential. Interviewees could choose to skip questions or sections of the interview. In general, two KHI project staff members participated in each interview, with one leading and the other taking extensive notes on a computer by entering responses onto a pre-loaded interview guide. All interviews were recorded. In a situation when only one KHI staff member was available, the interview was recorded and summarized after the interview.

Each interview took about one hour. The interviews followed the same general structure, which was as follows:

1. The interview began with an oral informed consent which outlined the interview protocols and included a confidentiality agreement.

2. The interviewer provided the interviewee with background information on the project.
3. A set of standard questions, including prompts, was asked of each interviewee (i.e., there was one set of standard questions for each of the three groups of interviewees). The topics in each set included:
    a. General Information about the organization,
    b. Planning for population health work,
    c. Population health activities/strategies, and
    d. Closing questions.

Analysis of Data

The interview notes were reviewed to check for grammatical errors and clarity. Once clean, the data were then uploaded into NVivo, a qualitative data management and analysis software. The researcher created nodes based on the project's research questions. Each question guide was uploaded to a specific node (by research question). Then, the researcher read each answer recorded in the interview guide and created thematic nodes. Next, the thematic nodes were reviewed to produce a summary.

Limitations

The 14 key informant interviews included in this study provide a snapshot of some insights. This is a non-probabilistic sample; however, the experiences and detailed insights provided by the PHIs, universities and hospitals/health systems will provided valuable information and ideas to inform this study.

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Appendix C. Interview Guide

Key Informant Interview Questions (Public Health Institutes and Other Organizations/Universities)

Introduction

General Information about the Institute/Organization

We will first start off by asking a few questions about the Institute.

1. What is your role at the (reference name here) Institute/Organization?
2. What is the organizational structure of the Institute/Organization?
3. What is the current number of Full-Time Equivalents (FTE) working in your Institute/Organization?
4. What topic areas does your Institute/Organization work in?
5. Are there new programmatic areas in which your Institute is currently building capacity? If so, which ones?

Part 1. Definition: Population Health

We would like to start with asking about your experience with using the term "population health."

1.1. What definition of population health has the Institute/Organization been using in its work with hospitals/health systems?

1.2. How have hospitals/health systems that the Institute/Organization engaged with defined population health?

1.3. How have hospitals/health systems that the Institute/Organization engaged with incorporated health equity or disparities in their definition of population health?

1.4. What narrative or words have the Institute/Organization used to help hospitals/health systems interpret the term "population health"?

1.5. What challenges, if any, have hospital(s)/health system(s) experienced with using the term "population health"?

Part 2. Planning Work: Hospitals/Health Systems and Population Health

Now we would like to learn more about the development of your efforts related to the engagement of hospitals and health systems in population health work.

2.1. Approximately, when did the Institute/Organization begin engaging hospitals/health systems in population health work?

2.2. Has the Institute/Organization primarily worked with hospitals or health systems or both?

☐Hospitals

☐Health Systems

☐Both

2.3. How many hospitals/health systems has the Institute/Organization worked with?

2.4. What factors have led to the Institute's/Organization's decision to engage hospitals/health systems in population health work?

2.5. What relevant staff expertise or experiences were helpful for engaging in this work?

2.6. What planning efforts has your Institute/Organization undertaken in preparation for this work?

2.7. How long did the planning efforts take?

2.8. Has the Institute/Organization engaged other organizations or individuals outside of the organization in the planning efforts?

If the answer is "yes," then ask:

2.8.1. What organizations or individuals outside of your organization has the Institute/Organization engaged?

2.8.2. What were their roles?

2.8.3. Why did you decide to engage these organizations or individuals?

2.8.4. What were some lessons learned working with these organizations?

Part 3. Systems/Structures Related to Hospitals' Population Health Work

Next, we would like to hear about your perspectives on existing structures/systems related to hospitals/health systems' engagement in population health work.

3.1. What legal or administrative structures, policies, regulations or rules exist to support hospitals/health systems' engagement in population health? (*Prompt: Affordable Care Act, reimbursement structures)*

3.2. In what ways do these structure, regulations, policies or rules affect the hospitals/health systems' decision to engage in population health?

3.3. What incentives exist to support hospitals/health systems engagement in population health?

3.3.1. From the incentives you have mentioned above, which ones have been of most interest to the hospitals/health systems you have engaged with and why? (*Please answer this question considering all of the hospitals/health systems you have worked with)*

3.3.2. From the incentives you have mentioned above, which ones have been of less interest to hospitals/health systems you have engaged with and why?

3.4. What challenges or barriers exist for hospital/health systems to engaging in population health work?

3.5. What role can public health institutes play in addressing these challenges?

Part 4. Activities

Now I would like to learn about some specific population health activities that the hospitals/health systems you have worked with engaged in. Please answer the questions considering all of the hospitals/health systems you have worked with.

4.1. Why did the hospital(s)/health system(s) you have worked with decide to engage in population health work?

4.2. What are some of the population health activities the hospital(s)/health system(s) engaged in?

4.3. How did these activities incorporate the considerations of health equity or disparities, if at all?

4.4. Why did the hospital(s)/health system(s) select these population health activities?

4.5. What were the main goals of the Institute/Organization in working with hospital(s)/health system(s) in these activities?

4.6. What services or resources did the Institute/Organization provide to the hospital(s)/health system(s) to support its population health work?

4.6.1. Please describe your experience with providing each resource/service?

i. What were some benefits to hospitals/health systems with receiving (list services mentioned in 4.6)?

ii. What were some benefits to the Institute/Organization related to each of the services?

iii. What were some challenges with providing these services to hospitals/health systems, if any?

Part 5. Results of Activities

Next, we would like to hear your perspectives regarding the results of the population health activities the hospital(s)/health system(s) engaged in.

5.1. What were the key successes of these activities for the hospital(s)/health system(s)?

5.1.1. What factors led to these successes?

5.2. What were some key successes for the Institute/Organization?

5.2.1. What factors led to these successes?

Part 6. Closing Questions

Now, we would like to wrap up our discussion with a few additional questions.

6.1. What suggestions do you have for other public health institutes interested in engaging hospitals/health systems in population health work?

6.2. Are there other public health institutes that have been working in this area that you recommend we contact?

6.3. Are there hospitals/health systems that you recommend we contact to discuss their work to address population health?

Thank you for your time! If you have any questions, please call (785) 233-5443 and ask for Tatiana Lin.

Appendix D. Examples of Operationalizing Population Health

Figure D-1 provides examples of population health related activities for the following areas: transportation, housing, early childhood−12th grade, community workforce (employment), access to healthy foods, access to physical activity, economic development and environmental quality. The examples were informed by several resources, including the County Health Rankings and Roadmaps Action Center[198] and the American Hospital Association Social Determinants of Health Guides.[199, 200, 201] The authors of this report hope that these examples could help hospitals and health systems identify strategies that might work for their organization and/or community.

Figure D-1. **Examples of Population Health Activities**

Transportation *Focus on Patients and Non-Patient Populations in the Community*	
Integrate access to transportation into the organization's strategic plan and practices	Connect individuals that have transportation needs to social, health care and other services (e.g., grocery stores, jobs, pharmacy, clinics)
Use data to understand the health impact of transportation	Participate in local transportation planning processes
Educate staff about transportation issues	Develop a bike share program
Incorporate transportation question(s) into patient intake form	Support and/or participate in the development of policies that create safer and more accessible transportation options (Complete Streets, Safe Sidewalks, etc.) (the creation of a complete network that is safe and convenient for all people using all modes of transportation)
Housing *Focus on Patients and Non-Patient Populations in the Community*	
Integrate access to safe and affordable housing into the organization's strategic plan	Participate in the development of affordable housing units
Incorporate housing question(s) into intake form to identify housing needs of patients	Provide preventive and acute medical care for homeless or at-risk individuals
Connect individuals experiencing housing instability or homelessness to housing services	Support or participate in neighborhood revitalization projects
Offer home safety assessments for environmental hazards like lead, pests, etc.	Provide subsidies for home repairs or connect individuals to resources that subsidize home repairs

Figure D-1 (continued). **Examples of Population Health Activities**

Early Childhood−12th Grade *Focus on Patients and Non-Patient Populations in the Community*	
Integrate access to education into the organization's strategic plan	Provide scholarships to students to gain training in careers needed in the community
Participate in the implementation of initiatives like safe walking routes to school, farm-to-school programs and/or school gardens	Provide or support childcare, after school programs
Provide funding for water bottle refill stations at schools	Provide breastfeeding support and nutrition education for new parents/caregivers
Community Workforce (Employment) *Focus on Patients and Non-Patient Populations in the Community*	
Integrate the focus on employment into the organization's strategic plan	Provide preemployment coaching, advice, guidance, assistance with resume
Use screening tool to identify needs related to unemployment or underemployment and connect individuals to services	Support and/or participate in the development of policies that help create, sustain, and retain a viable workforce
Support training programs	
Access to Healthy Foods *Focus on Patients and Non-Patient Populations in the Community*	
Integrate access to healthy foods into the organization's strategic plan	Support assessment of community food environment
Incorporate question(s) in intake form to identify individuals who experience food insecurity (limited or uncertain access to adequate food)	Assist in the development and/or implementation of community gardens or green houses, farmers markets
Provide referrals to organizations like local food pantries, emergency food organizations, etc.	Offer nutrition education or cooking classes
Serve as a "food hub" that actively manages the aggregation and distribution of food in the community	Support and/or participate in the development of policies that focus on affordability and accessibility of healthy foods (e.g., acceptance of SNAP benefits at farmers markets)

Figure D-1 (continued). **Examples of Population Health Activities**

Access to Physical Activity *Focus on Patients and Non-Patient Populations in the Community*	
Integrate access to physical activity into the organization's strategic plan	Develop "physical activity prescriptions" with providers to prescribe to patients
Support assessment of opportunities for physical activity in the community	Facilitate or supports physical activity in community settings (e.g., walk with a dog, 5K, Fun Run)
Contribute to the development/improvement of trails, sidewalks, parks	
Access to Health Care *Focus on Patients and Non-Patient Populations in the Community*	
Integrate focus on "addressing barriers to accessing health care" into the organization's strategic plan	Institute programs focused in improving care coordination of patients (e.g., home visits, patient navigator)
Provide health insurance (e.g., Medicaid, Medicare) enrollment services	Use community health workers to coordinate care and connect patients to community resources
Provide transportation to health care Services (e.g., pharmacy, clinic)	Contribute to relevant policymaking (e.g., provides testimony)
Offer telehealth services (health care services provided over a distance via telephone or videoconference	
Economic Development *Focus on Patients and Non-Patient Populations in the Community*	
Integrate economic development into the organization's strategic plan	Contribute to the development of grocery stores
Support workforce needs assessments in the community	Facilitate recruitment of businesses to the community
Address conditions of blight in the community	Support local businesses
Participate in community planning efforts	

Figure D-1 (continued). **Examples of Population Health Activities**

Environmental Quality *Focus on Patients and Non-Patient Populations in the Community*	
Integrate environmental quality into the organization's strategic plan	Provide education to community/staff about environmental issues and related health risks
Contribute to the assessment of water quality and air quality	Participate in the planning and development of green infrastructure (e.g., community space at the hospital, planter boxes next to the road or parking)
Support and/or participate in the development of policies that improve air quality (e.g., tobacco free parks, idle-free zones)	

Source: KHI and KHA 2018 Population Health Survey of Kansas Hospitals.

Appendix E. Survey of Hospitals/Health Systems and Population Health

Q1 Dear Hospital CEO,

There has been a growing interest within the health care sector to explore the feasibility of engaging in population health efforts. While good work has been done in this area, many hospitals in Kansas have indicated the need to learn more about practical strategies for addressing population health and incentives to support this work.

In order to understand Kansas hospitals' efforts in the area of population health, including utilized strategies, considerations, benefits and challenges, we are asking for your help by completing this survey. The information gathered from this survey will help guide our efforts to support your population health activities.

Your responses will be compiled with other responses and we will never directly identify your individual response. You can choose to skip questions that you don't feel comfortable answering and you can stop at any time. To know how far you have come in a survey, please refer to a progress bar at the top of each page.

The survey should take about 20 minutes of your time. We kindly ask that you complete the survey no later than May 21. Please contact Karen Braman at kbraman@kha-net.org with any questions.

Thank you for your time and input!

First, we would like to ask you a few general questions about population health related terminology.

To what extent do you agree with this statement? "I have a clear understanding of what each of these terms means."

	Disagree	Neutral	Agree
Population health	○	○	○
Community health	○	○	○
Population health management	○	○	○
Public health	○	○	○

How does your organization define population health? Please select one answer by clicking on the box in grey.

○ Strategies that focus on clinical approaches for improving patients' health

○ Strategies that focus on clinical and non-clinical approaches (e.g., such as transportation, housing, access to food and others) for improving patients' health

○ Strategies that focus on clinical and non-clinical approaches (e.g., such as transportation, housing, access to food and others) for improving the health of patients as well as the health of other groups of individuals. These groups can be geographically defined (zip code, city) or they may share some characteristics such as being elderly, having a low-income, etc.

○ Our organization hasn't defined population health

○ Other _____

How does your organization define its "population(s)"? Please select all that apply by clicking on each box in grey.

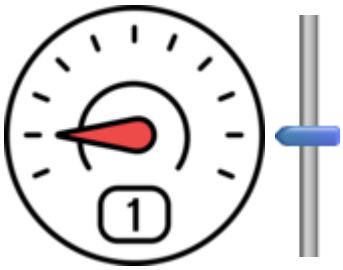
- ☐ Individuals for whom you have a financial risk
- ☐ Individuals experiencing certain disease(s) or condition(s)
- ☐ Individuals who may utilize your hospital or health care system
- ☐ Individuals living in a specified geographic area or community
- ☐ Sociodemographic subgroups (e.g., elderly, low-income, ethnic minorities)
- ☐ Other _____

To what extent do you agree that your organization should focus on addressing the health of populations beyond its patients (e.g., populations in the community)? Please select one answer by clicking on the box in grey.

- ○ Strongly Disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly Agree

Now, we would like to learn more about specific population health activities that your organization has engaged in and/or implemented.

On a scale from 0-10 with 10 being the highest impact, to what degree do you think various social and economic factors including housing, transportation, poverty, and education impact overall health outcomes?



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10

To what extent do you agree that your organization should address social and economic factors in the community such as housing, transportation, poverty, and education? Please select one answer by clicking on the box in grey.

- ○ Strongly Disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly Agree

Please indicate your organization's awareness about community needs in each of these areas.

	Not at All Aware	Slightly Aware	Don't Know	Moderately Aware	Extremely Aware
Transportation	○	○	○	○	○
Housing	○	○	○	○	○
Early childhood -12th grade education	○	○	○	○	○
Community workforce (employment)	○	○	○	○	○
Access to healthy food	○	○	○	○	○
Access to physical activity	○	○	○	○	○
Access to care	○	○	○	○	○
Economic development	○	○	○	○	○
Environmental quality in the community	○	○	○	○	○
Other	○	○	○	○	○

How involved do you think your organization should be in addressing each of the following areas?

	Not at All	To a Small Extent	Don't Know	To a Moderate Extent	To a Great Extent
Transportation	○	○	○	○	○
Housing	○	○	○	○	○
Early childhood -12th grade education	○	○	○	○	○
Community workforce (employment)	○	○	○	○	○
Access to healthy food	○	○	○	○	○
Access to physical activity	○	○	○	○	○
Access to care	○	○	○	○	○
Economic development	○	○	○	○	○
Environmental quality in the community	○	○	○	○	○
Other	○	○	○	○	○

In which of the following areas has your organization implemented efforts? Please select all that apply by clicking on each box in grey.

- ☐ Transportation
- ☐ Housing
- ☐ Early childhood -12th grade education
- ☐ Community workforce (employment)
- ☐ Access to healthy food
- ☐ Access to physical activity
- ☐ Access to health care
- ☐ Economic development
- ☐ Environmental quality in the community
- ☐ Our organization has not implemented efforts in any of these areas

What activities is your organization engaged in regarding transportation?

	Focus on Patients	Focus on Non-Patient Populations in the Community	Focus on Both (Patients + Non-Patient Populations in the Community)	No Action Implemented in This Area
Integrates access to transportation into the organization's strategic plan	○	○	○	○
Uses screening tool to identify transportation needs	○	○	○	○
Partners with transportation services to provide rides to and from the hospital	○	○	○	○
Connects individuals that have transportation needs to health-related services (e.g., pharmacy)	○	○	○	○
Connects individuals that have transportation needs to services (e.g., grocery stores)	○	○	○	○
Participates in local transportation planning processes	○	○	○	○
Advocates for and/or participates in implementation of policies such as Complete Streets (the creation of a complete network that is safe and convenient for all people using all modes of transportation)	○	○	○	○
Other	○	○	○	○

What activities is your organization engaged in regarding housing?

	Focus on Patients	Focus on Non-Patient Populations in the Community	Focus on Both (Patients + Non-Patient Populations in the Community)	No Action Implemented in This Area
Integrates access to safe and affordable housing into the organization's strategic plan	○	○	○	○
Uses screening tool to identify housing needs	○	○	○	○
Offers home safety assessments for environmental hazards like lead, pests, etc.	○	○	○	○
Provides referrals to community services	○	○	○	○
Provides subsidies for home repairs	○	○	○	○
Participates in the development of affordable housing units	○	○	○	○
Connects to services that provide transitional housing for individuals without stable housing	○	○	○	○
Has an employee who is responsible for coordinating or connecting individuals to housing services	○	○	○	○
Other	○	○	○	○

What activities is your organization engaged in regarding early childhood–12th grade education? Please select all that apply by clicking on each grey box.

- ☐ Integrates access to education into the organization's strategic plan
- ☐ Participates in the implementation of initiatives like safe walking routes to school
- ☐ Participates in the implementation of initiatives like farm-to-school programs and/or school gardens
- ☐ Provides funding for water bottle refill stations at schools
- ☐ Provides scholarships to students to gain training in careers needed in the community
- ☐ Supports before and/or after school programs
- ☐ Provides or supports childcare
- ☐ Provides breastfeeding support and nutrition education for new parents/caregivers
- ☐ Other _____

What activities is your organization engaged in regarding community workforce (employment)?

	Focus on Patients	Focus on Non-Patient Populations in the Community	Focus on Both (Patients + Non-Patient Populations in the Community)	No Action Implemented in This Area
Integrates the focus on employment into the organization's strategic plan	○	○	○	○
Uses screening tool to identify needs related to unemployment or under-employment	○	○	○	○
Supports training programs	○	○	○	○
Provides pre-employment coaching, advice, guidance, assistance with resume	○	○	○	○
Advocates for and/or participates in implementation of policies related to minimum wage increases	○	○	○	○
Other	○	○	○	○

What activities is your organization engaged in regarding access to healthy food?

	Focus on Patients	Focus on Non-Patient Populations in the Community	Focus on Both (Patients + Non-Patient Populations in the Community)	No Action Implemented in This Area
Integrates access to healthy foods into the organization's strategic plan	○	○	○	○
Uses screening tool to identify individuals who are food insecure (limited or uncertain access to adequate food)	○	○	○	○
Provides referrals to organizations like local food pantries, emergency food organizations, etc.	○	○	○	○
Distributes food on-site via food pantries, home deliveries, summer food programs for children	○	○	○	○
Offers nutrition education or cooking classes	○	○	○	○
Provides on-site help and applications for SNAP, WIC, TANF benefits	○	○	○	○
Supports assessment of community food environment	○	○	○	○
Assists in the development and/or implementation of community gardens or green houses	○	○	○	○
Assists in the development and/or implementation of farmers markets	○	○	○	○
Advocates for and/or supports implementation of policies that focus on affordability and accessibility of healthy foods (e.g., acceptance of SNAP benefits at farmers markets)	○	○	○	○
Serves as a "food hub" that actively manages the aggregation and distribution of food in the community	○	○	○	○
Other	○	○	○	○

What activities is your organization engaged in regarding access to physical activity?

	Focus on Patients	Focus on Non-Patient Populations in the Community	Focus on Both (Patients + Non-Patient Populations in the Community)	No Action Implemented in This Area
Integrates access to physical activity into the organization's strategic plan	○	○	○	○
Supports assessment of opportunities for physical activity in the community	○	○	○	○
Contributes to the development/ improvement of trails, sidewalks, parks	○	○	○	○
Provides "physical activity prescriptions"	○	○	○	○
Facilitates or supports physical activity in schools	○	○	○	○
Facilitates or supports physical activity in community settings (e.g., walk with a dog, 5K, Fun Run)	○	○	○	○
Other	○	○	○	○

What activities is your organization engaged in regarding access to health care?

	Focus on Patients	Focus on Non-Patient Populations in the Community	Focus on Both (Patients + Non-Patient Populations in the Community)	No Action Implemented in This Area
Integrates focus on "addressing barriers to accessing health care" into the organization's strategic plan	○	○	○	○
Provides health insurance (e.g., Medicaid, Medicare) enrollment services	○	○	○	○
Provides transportation to health care services	○	○	○	○
Offers telehealth services (health care services provided over a distance via telephone or videoconference)	○	○	○	○
Provides home visits	○	○	○	○
Uses community health workers	○	○	○	○
Coordinates care	○	○	○	○
Contributes to relevant policymaking (e.g., provides testimony)	○	○	○	○
Other	○	○	○	○

What activities is your organization engaged in regarding economic development? Please select all that apply by clicking on each box in grey.

- ☐ Integrates economic development into the organization's strategic plan
- ☐ Supports workforce needs assessments in the community
- ☐ Provides scholarships to students to gain training in careers needed in the community
- ☐ Participates in community planning efforts
- ☐ Supports local businesses
- ☐ Contributes to the development of affordable housing units
- ☐ Contributes to the development of grocery stores
- ☐ Improves opportunities for community physical activity
- ☐ Facilitates recruitment of businesses to the community
- ☐ Other _____

What activities is your organization engaged in regarding community environmental quality? Please select all that apply by clicking on each box in grey.

- ☐ Integrates environmental quality into the organization's strategic plan
- ☐ Contributes to the assessment of water quality and quantity
- ☐ Contributes to the assessment of air quality
- ☐ Provides education about environmental issues
- ☐ Contributes to the development of green infrastructure (e.g., putting planter boxes next to the road or parking)
- ☐ Other _____

Next, we would like to hear your perspectives regarding potential incentives and barriers for hospitals' engagement in population health.

In general, how familiar are you with legal, administrative structures, policies, regulations or rules that exists to support hospitals' engagement in population health? Please select one answer by clicking on the box in grey.

- ○ Not at all familiar
- ○ Slightly familiar
- ○ Somewhat familiar
- ○ Moderately familiar
- ○ Extremely familiar

Please rank a list of incentives for your organization to address social and economic factors (e.g., housing, transportation, poverty, education) and focus on populations beyond patients by dragging and dropping each item in order of preference, with 1 being the greatest incentive.

_____ Decrease readmissions
_____ Decrease emergency room utilization
_____ Decrease uncompensated care
_____ Decrease cost
_____ Fulfill the IRS requirement for community benefit
_____ Move from volume-based to value-based care
_____ Improve health of the community
_____ Attract and retain population in the community
_____ Other

Please rank the following challenges for addressing social and economic factors (e.g., housing, transportation, poverty, education) and focusing on population(s) beyond patients by dragging and dropping each item in order of preference, with 1 being the most challenging and 7 being the least challenging?

_____ Available funding
_____ Difficult to capture return on investment
_____ Limited staff expertise in working on community issues (e.g., transportation) and on population beyond patients
_____ Lack of stakeholder buy-in (e.g., community partners, board)
_____ Current reimbursement structures
_____ Navigating regulations related to social and economic factors
_____ Other

What tools, resources, or technical assistance do you need for increasing the work of your organization toward improving population health? Please rank your choices by dragging and dropping each item in order of preference, with 1 being the highest and 8 being the lowest.

_____ Provide training to hospital staff
_____ Help to identify population health strategies
_____ Assistance with understanding how to link clinical data with population health data
_____ Help to identify funding sources
_____ Share evidence-based practices from Kansas and other states
_____ Develop peer networking between hospitals that engage in population health work
_____ Foster buy-in internally and externally
_____ Other

In order to better understand the results of this survey, we would like to know a little more about your hospital.

For the next several questions, please use the following definition of population health. Population health refers to clinical and non-clinical approaches for improving health outcomes of patients and other geographically defined populations (community at large). The non-clinical approaches usually focus on addressing determinants of health issues in the community such as transportation, housing, and access to healthy food.

Does your organization have specific individuals who are accountable for advancing your hospital's population health work? Please select one answer by clicking on the box in grey.

- ○ Yes
- ○ No
- ○ Unsure

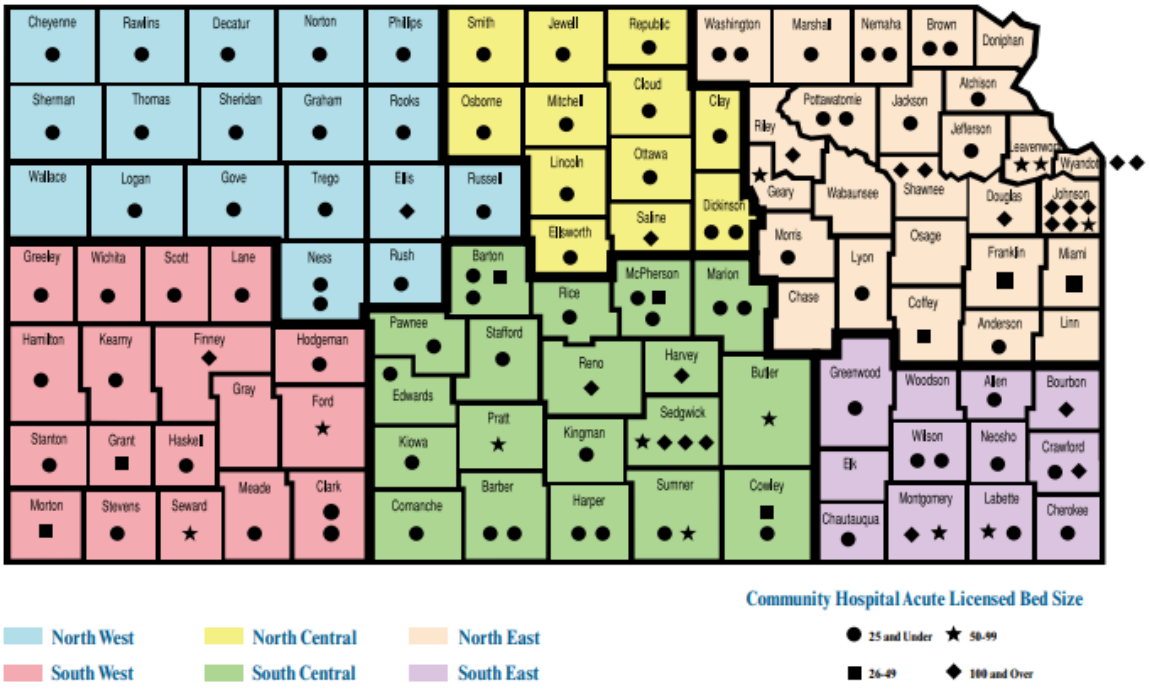
What is the level of the position that oversees all population health efforts for your hospital/health system? Please select one answer by clicking on the box in grey.

- ○ Executive management (CEO, CFO)
- ○ Senior management (Vice President)
- ○ Middle management
- ○ Program/project director
- ○ Program/project staff
- ○ Other _____

What is the approximate number of FTE positions dedicated to population health at your organization? Please select one answer by clicking on the box in grey.

- ○ Less than 1 FTE
- ○ 1 FTE
- ○ Between 2-4 FTE
- ○ More than 5 FTE
- ○ Unsure

Please use the map below to identify in which hospital district your hospital is located before answering the next question.



In which district is your hospital located?

- ○ North West
- ○ South West
- ○ North Central
- ○ South Central
- ○ North East
- ○ South East

How many hospital acute licensed beds does your hospital have? Please select one answer by clicking on the box in grey.

- ○ 25 and under
- ○ 26-49
- ○ 50-99
- ○ 100 and over

Thank you for your time and participation! If you feel that your hospital has implemented some interesting efforts to address one or more social or economic factors such as housing, transportation, poverty, education or others, we invite you to participate in a one-hour interview with Kansas Hospital Association and Kansas Health Institute staff. The information provided during the interview will be featured in a case study and a short video. If you are interested in participating in the interview, please click on this link Participate in Case Studies or contact Cindy Samuelson, KHA at csamuelson@kha-net.org.

Appendix F. Endnotes

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