The Center for Rural Pennsylvania
A Legislative Agency of the Pennsylvania General Assembly

Exploring Healthcare Alliances in Rural Pennsylvania

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EXECUTIVE SUMMARY

Rural America is often at a significant disadvantage, when compared to its urban counterparts, in accessing quality and affordable healthcare. Rural hospitals remain vulnerable to closure due to broad environmental and health industry forces. One such force is an accelerating industry trend to consolidate and coordinate services across increasingly larger service areas. This trend is in response to a rapidly transforming and competitive healthcare environment. Rural health organizations have increasingly aligned with larger healthcare systems to offset operational and financial risks to continue serving their communities. Oftentimes, the organizational structure of these healthcare alliances varies significantly.

The frequency and intensity of healthcare alliances in Pennsylvania have not been documented comprehensively, and the question remains as to how these healthcare alliances impact the community health capacity of rural Pennsylvania, and, ultimately, the health-related quality of life of rural Pennsylvanians.

To help answer this question, the researchers documented the experiences of five rural healthcare alliances in Pennsylvania to highlight the impact of healthcare alliances in rural Pennsylvania communities. The five rural alliances are: Laurel Health System; Wayne Memorial Health System;

Shamokin Area Community Hospital; Penn Highlands Healthcare; and the Tyrone Regional Health Network. The researchers used open-ended, structured interviews with 48 key stakeholders and publicly available data on community social and economic characteristics, community health status, and hospital operational and financial performance to complete the research.

Results

Not surprisingly, given the current state of healthcare, collaborative efforts across all five cases were influenced by one or more of the following considerations. First and foremost, rural community health leaders simply believed that the benefits of forming an alliance to better leverage scarce resources outweighed the associated costs. Secondly, institutional leaders believed operational efficiencies could truly be achieved by reducing inter-organizational redundancy and improving service coordination. Third, considering the increasing complexity and risk of newly developing healthcare reimbursement and service delivery models, rural community health leaders were motivated by considerations of stability. Alliances could potentially mitigate uncertainty by more broadly sharing the risks associated with change and by committing greater and more expert resources to market adaptation. Finally, on occasion, rural health organizations attempted to collaborate with a more prestigious organization to increase legitimacy.

The forms of alliances studied proved to be rich and varied, ranging from informal collaborative arrangements sealed literally with a handshake to formal equity or near equity arrangements represented by full asset mergers, member substitution agreements, and super-parent organization structures. Of interest, the rural community health institutions studied formed alliances at community, regional, and, in one instance, national levels of affiliation. Somewhat surprisingly, the institutions studied did not always immediately seek regional partners, if at all. Oftentimes, they preferred to better serve their communities by collaborating with other community health and social service providers. The Laurel Health System, Tyrone Regional Health Network, and Wayne Memorial Health System are exceptional examples of how to create high performing networks of essential health and health-related services within relatively small

rural communities. Through these efforts, these small health networks gained strategic advantage by strengthening their bargaining positions relative to larger systems interested in pursuing some form of affiliation.

Overall the outcomes of affiliations are positive. In most cases, these alliances minimized the rural hospitals' operational and financial risks, and increased community health capacity through increased investment in rural hospitals and their associated services. In many instances, the introduction of new services was based on documented community need. And in several cases, innovative approaches to care were implemented. An example includes the application of telemedicine solutions to improve access to specialty care services. The research documents numerous efforts to improve care coordination and invest in clinical quality. Although conclusively demonstrating that these organizational changes resulted in improved community health status proved to be beyond the scope of the study, the study showed that population-based health management models are in place in several communities, which offer the potential for long-term health status improvement.

Numerous factors led to the successful conclusion of affiliation discussions and subsequent organizational integration. In regard to partnership selection, two key factors include prior successful working relationships and shared organizational beliefs and values. Especially during negotiations, outstanding leadership within both organizations' governance and management structures is indispensable. Finally, a well-designed and executed transition plan is essential to minimize the inevitable challenges associated with organizational structure and process integration.

The research findings offer support for a number of private and public policy initiatives, including the Medicare Rural Hospital Flexibility Program, which focuses on facilitating improvement in the operational, financial and population management capabilities and competencies of Critical Access Hospitals. Given the role of two critical access hospitals (Soldiers & Sailors, and Tyrone) in the

successful community efforts to improve healthcare capacity, public sector policy considerations to further strengthen community health coalitions and/or to reduce the financial vulnerability of critical access hospitals are essential.

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The Center for Rural Pennsylvania is a bipartisan, bicameral legislative agency that serves as a resource for rural policy within the Pennsylvania General Assembly. It was created in 1987 under Act 16, the Rural Revitalization Act, to promote and sustain the vitality of Pennsylvania's rural and small communities.

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INTRODUCTION

Rural America is often at a significant disadvantage, compared to its urban counterpart, when it comes to accessing quality and affordable healthcare. "Economic factors, cultural and social differences, educational shortcomings, lack of recognition by legislators and the sheer isolation of living in remote rural areas," notes the National Rural Health Association (NRHA), "all conspire to impede rural Americans in their struggle to lead a normal, healthy life."[1]

These environmental factors, coupled with health industry forces, have created ongoing challenges for rural communities attempting to sustain already strained community health capacity in place to provide accessible and affordable healthcare.[2] In this study, rural community health capacity represents an identifiable grouping of health providers and institutions collectively providing healthcare services (both volume and distribution of services) to a designated rural population within a defined geographical area.

A community's capacity to provide its residents with access to affordable quality healthcare is one of five key determinants of individual and community health status.[3] The limited volume and distribution of medical services in rural communities relative to suburban and urban settings is well established. According to the Robert Wood Johnson (RWJ) Foundation's County Health Rankings, rural counties in Pennsylvania largely remain below national and state averages on four of the five determinant measures.[4] In an overall ranking of Pennsylvania's 67 counties, all of the counties that rank between 51 and 67 in health determinants are classified as rural counties with the exception of two.[5] Stark differences between these rural counties and other Pennsylvania counties are most apparent when comparing measures associated with the availability, affordability and quality of healthcare.[6] Not surprisingly, according to the RWJ County Health Rankings, all but four Pennsylvania counties ranked between 51 and 67 in health

[1] National Rural Health Association (NRHA), 2014.
[2] These industry factors include changes in reimbursement methodologies; loss of market power; and declining occupancy rates.
[3] The remaining three key determinants of individual and community health status include: individual choices and behavior; socio-economic status; the physical environment; and, inherited genetic attributes.
[4] The measures are: access to healthcare; individual choices and behavior; socio-economic status; and the physical environment.
[5] The two non-rural counties are Philadelphia and Delaware counties.
[6] Robert Wood Johnson Foundation, 2014.

outcomes (based on length of life and quality of life measures) are classified as rural counties.[7] These health outcome findings are supported by NHRA reports documenting the facts that rural residents experience higher rates of chronic disease (hypertension, diabetes, arthritis, etc.) and have poorer health outcomes than do their urban counterparts.[8]

The challenges associated with sustaining and growing healthcare service capacity in rural communities are well documented.[9] Rural regions contain more than twice as many Health Professional Shortage Areas than urban areas —areas that lack primary medical, dental and mental healthcare providers.[10] While nearly 25 percent of all Americans live in rural areas, only about 10 percent of physicians practice there.[11] And the future does not look promising. A substantial percentage of primary care physicians are approaching retirement, rural pharmacies are closing, and there are fewer medical school graduates picking primary care as their professional path, and even fewer picking the rural health track.[12]

"For many rural communities, it is the community hospital[13] that has served as the focus of healthcare delivery; they remain the most prominent and effective institution to organize the delivery of care."[14] Of the 166 community hospitals in Pennsylvania, 44 percent (73) are rural community hospitals, serving 27 percent of its citizens.[15] Pennsylvania's rural community hospitals represent 3.7 percent of all rural community hospitals in the US.[16]

Unlike their urban counterparts, however, rural hospitals remain vulnerable to closure due to broad

[7] The four non-rural counties are Delaware, Philadelphia, Luzerne, and Lackawanna.
[8] (NRHA), Ibid.
[9] Balance, Kornegay and Evans, 2009; Casey, Klingner and Moscovice, 2002; Daniels, VanLeit, Skipper, Sanders and Rhyne, 2007; MacDowell, Glasser, Fitts, Fratzke and Peters, 2009; Moscovice and Stensland, 2002; Rabinowitz, Diamond, Hojat and Hazelwood, 1999; and Radford, Slifkin, King, Lampman, Richardson and Rutledge, 2011.
[10] Pennsylvania Department of Health, 2014.
[11] (NRHA), Ibid.
[12] Roseamelia, et al., 2014; see also Kelli, 2013.
[13] The American Hospital Association (AHA) organizes hospitals into the following groups: community hospitals, federal hospitals; nonfederal psychiatric hospitals; and nonfederal long term care hospitals.
[14] Ricketts, 2000.
[15] Pennsylvania Department of Health, 2014.
[16] Schulte, 2013.

economic and social trends and health industry forces. Indeed, there has been a net decline in the number of rural community hospitals over the last 30 years.[17] Research results are mixed regarding the absolute effects of closure on service use. There is agreement, however, that their loss further increases access differences and contributes to a decline in a community's quality of life.[18]

National and regional health systems are regularly initiating strategies to consolidate and coordinate services across increasingly larger service areas. From a system perspective, justifications for these healthcare alliances include increased service efficiency and improved service availability and quality.[19] From a pragmatic perspective, these actions are equally driven by efforts to grow market share and bargaining power. Rural health organizations, especially rural community hospitals, have increasingly chosen to align with larger healthcare systems to offset negative industry trends; minimize operational and financial risk; and increase capacity, all to continue serving their communities. The pace of integration is expected to continue, and possibly accelerate, with implementation of the Accountable Care Organization provisions of the Affordable Care Act and the healthcare Education and Reconciliation Act of 2010.[20]

Healthcare alliances vary significantly from loosely structured non-equity affiliations (examples include management service agreements, staffing agreements, shared services agreements, etc.) to formal mergers and/or equity-based partnerships (often formed to introduce services that were not previously available, for example a cancer treatment center). To date, the frequency and intensity of healthcare alliances in Pennsylvania are not documented comprehensively. In Pennsylvania's history, there are two well-known examples: western Pennsylvania, where the University of Pittsburgh Medical Center (UPMC) has built a dominant regional system partially comprised of five rural community hospitals; and central and north

[17] Kaufman et al., 2016.
[18] Pennsylvania Department of Health, 2014.
[19] Evans, 2014.
[20] The Accountable Care Organization concept is one that is evolving, but generally, an ACO can be defined as a set of healthcare providers—including primary care physicians, specialists, and hospitals—that work together collaboratively and accept collective accountability for the cost and quality of care delivered to a population of patients.

central Pennsylvania, where the Geisinger Health System (GHS) has incorporated three rural community hospitals into one larger health system.

How might these healthcare alliances impact the community health capacity of rural Pennsylvania, and ultimately the health-related quality of life of rural Pennsylvanians? Do these alliances truly benefit rural residents? Are new services based on documented community need, or are they designed to disproportionately benefit the rural health community's new partner? Do these healthcare alliances allow for individualization, catering to the specific needs and wants of rural people, or are they more often a "one size fits all" model. And finally, do these alliances result in decreased costs as well as improved service quality and care accessibility for rural residents?

Research Goals

This research examined the formation of healthcare alliances; their effect on rural community healthcare capacity, and the potential of these alliances to better meet the needs of rural communities. This research was guided by four goals. The first goal was to evaluate the extent to which healthcare alliances resulted in increased rural community healthcare capacity and related changes in community health status. With regard to capacity measurement, publicly available community health capacity indicators were identified and documented for a series of years before and after any affiliation activity for each of the five cases. This allowed for a reasonable assessment. But while the project included health status data over a period of time, the inability to isolate the impact of changes in community healthcare capacity from other community influences on changes in healthcare status prohibited the researchers from concluding with any confidence that any one alliance had a direct, measurable impact on community health status. However, throughout the report, special attention is given to the overall impact of alliance activities on community health status, measured indirectly through self-reported patient satisfaction data, clinical quality care scores and increased patient volume.

The second goal was to determine if any increases in rural community healthcare capacity (for example, existing service expansion or new service introduction), resulting from the formation of healthcare alliances, were based on documented community need. To this end, stakeholders for each of the five cases reported all improvements and additions in healthcare services. These changes were matched against community needs as identified in the most recent community needs survey available for each case.

The third goal was to determine if new alliance related methods of delivery introduced in rural communities were in line with recommended rural healthcare practices. Through interviews with key community health stakeholders in each of the five cases, new service delivery models were identified. To meet this goal, these service innovations were then compared to recommended practices offered by leading national public health organizations and associations.[21] Special attention was given to the significance of these new methods for each case. The report then provides a discussion on the use of such practices in rural Pennsylvania healthcare systems.

The fourth goal was to evaluate the extent to which healthcare alliances have improved quality, service efficiency (for example minimizing rural hospitals' financial and/or operational risks), and accessibility to healthcare services for rural residents. While a truly exhaustive and objective analysis of these categories is beyond the scope of this project, a few factors were identified that speak to a hospital's quality, efficiency and accessibility of care; namely, changes in patient volume, yearly revenues, and a comparison of patient satisfaction surveys called, Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS). Taken together, these measures—in addition to other more anecdotal data collected through interviews—were used to evaluate healthcare improvements.

METHODOLOGY

A qualitative research design was employed that relied upon both primary and secondary sources of data

[21] Health and Human Services Office of Disease Prevention and Health Promotion; Health Resources and Services Administration Office of Rural Health Policy and their network of Rural Health Research and Policy Centers; the National Rural Health Association.

to highlight the impact of healthcare alliances in rural communities throughout Pennsylvania. Primary sources included information gathered from open-ended structured interviews with 48 key stakeholders. Secondary data included publicly available data on community social and economic characteristics, community health status, and hospital operational and financial performance. Combining multiple methods of data collection has many recognized benefits, the most significant of which is the additional assurance of validity offered by triangulation.[22]

The unit of analysis in this project is rural community health capacity. For research purposes, rural community health capacity refers to the volume and distribution of medical resources (institutions and providers) collectively providing health services for an overlapping set of rural residents within a defined geographical area. The size and scope of these units vary and are defined in two ways: by determining the overlap of all healthcare institution and healthcare providers' primary service area footprints; and, by documenting evidence of routine and regular interaction among the unit's participants. In this project, health system service areas were used as the primary mechanism for defining the breadth of each unit, and were defined through ZIP codes. Community health capacity for a defined geographical area and population can and do spillover county lines and other municipal boundaries. Such boundaries are often determined by physical environmental factors (i.e., transportation issues like driving distance and road conditions) and/or social and demographic factors (i.e., social class and racial/ethnic comforts or population concentrations). In order to identify the many and varied rural community health capacity regions or districts throughout rural Pennsylvania, and to select from this pool a manageable number of case studies that best represent their variety in the state, researchers pursued a multiple-step process: identification, prioritization, and selection.

Drawing on the *Pennsylvania State Health Assessment, 2013*, and definitions of "rural" by the Center for Rural Pennsylvania, the researchers limited their search of healthcare service areas to only those within

[22] Babbie, 1991.

the 48 counties that have less than 284 persons per square mile. Representatives of the Pennsylvania Association of Community Health Centers, and the Pennsylvania Office of Rural Health—both organizations with strong working relationships with the state's rural health systems—were consulted. Researchers visited both organizations two times and conducted extensive face-to-face interviews. Interviews were digitally recorded and later transcribed by research assistants. Significant attention was given to identifying those health systems that best represented a variety of dimensions, namely, location within the state, type of relationship/alliance (i.e., non-equity, full mergers and/or equity based partnerships), and length of alliance.

Researchers reviewed interview transcripts and developed a list of 22 health systems in rural Pennsylvania (See Research Document A). This list represented a prioritization of potential cases that were most directly in line with the study's research question. These health systems were ordered by the following categories: two hospital systems, multi-hospital systems, hospital alliances, and community alliances. The 22 health systems were also identified according to their type of relationship, length of relationship, financial status, region within the state, and whether there was a contact available.[23] In addition, for the purposes of this study, researchers employed a self-developed Health-Care-Access Risk Model (HCA Risk Model) to assist in the selection of research sites.

The HCA Risk Model was informed by other population health models, such as those used to generate the Community Need Index (Dignity Health), the Community Commons Vulnerable Population Index (Advancing the Movement), and the Medically Underserved Area Index (HHS). The research model employs numerical values of key population characteristics.[24] The key characteristics selected by the researchers were those recognized in the literature as being correlated with population healthcare

[23] Aligns with nine hospital regions identified in Pennsylvania Health Care Cost Containment Council (PHC4) Financial Performance Report.

[24] The 10 weighted variables included in the model are: population 18years and younger; population 65 years and older; % of population without health insurance; % of population on public health insurance; % of rental housing units; % of housing vacancies; % of population at or below the poverty line; % of non-white population; % of population with less than high school education; and % of population unemployed.

conditions. More specifically, community health status was determined by social and economic disparities experienced by community members as a result of where they are born, raised, and live out their lives; and secondarily, by the personal health risks each community member accepts throughout their life. In general, a higher than average personal health risk tolerance is accepted among lower socioeconomic groups.[25] Thus the model heavily weights education and economic variables to identify those most disadvantaged and at greatest health risk and incorporates variables associated with financial access to care to assess barriers to care.

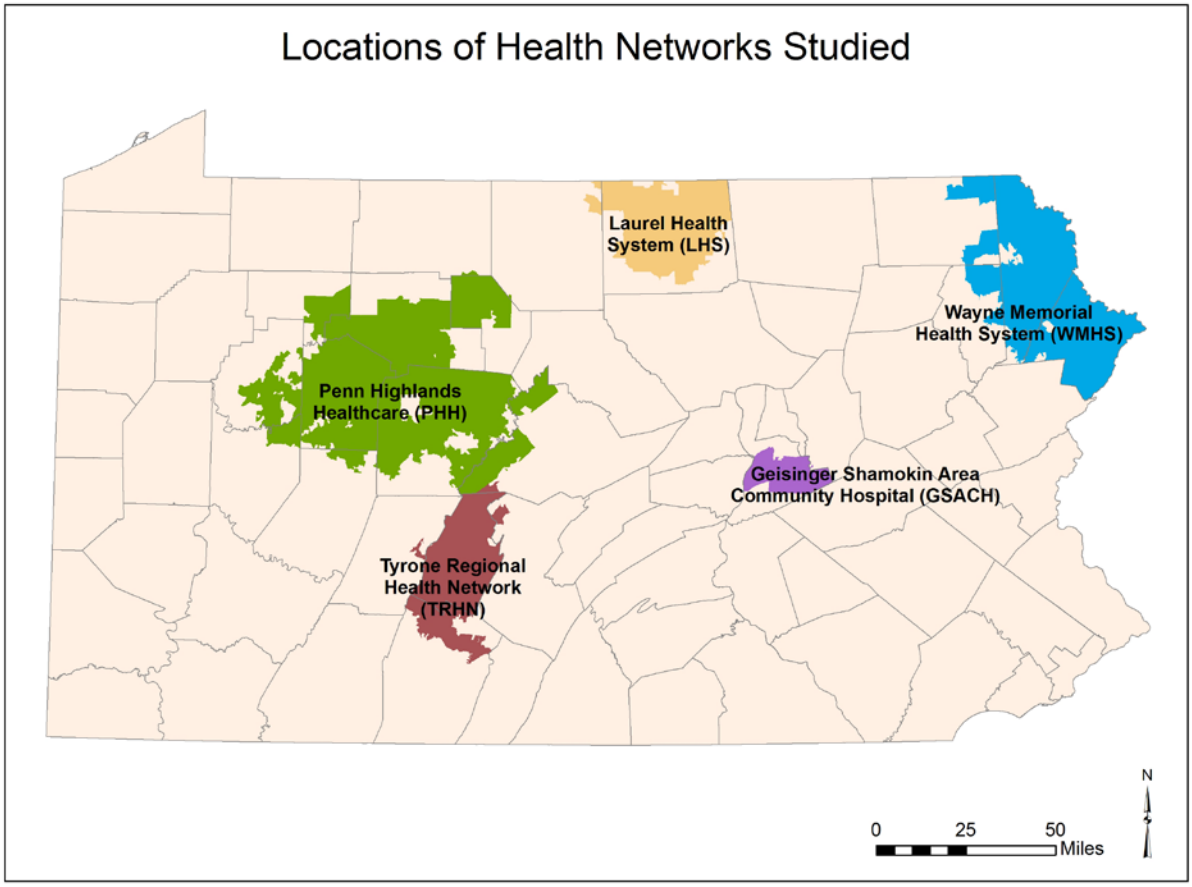
For each rural ZIP code in Pennsylvania a single healthcare access risk value per ZIP code was generated. The value of each of the rural ZIP codes was then standardized to the mean for the combined rural ZIP codes in Pennsylvania.[26] Researchers regard communities with standard scores that are above the state mean as being more vulnerable. In keeping with the literature, researchers posit that vulnerable communities have higher than average demonstrated needs for healthcare and higher than average healthcare access barriers. As a consequence, researchers believe these vulnerable communities experience a greater than average risk of sub-par healthcare outcomes relative to Pennsylvania rural communities as a whole.

As stated above, researchers initially relied on this measure to rank possible sites by community vulnerability. Researchers were interested in including among the research sites several with significant gaps between community need and healthcare service accessibility. The information aided in the research process by providing researchers with a deeper understanding of the communities they visited. The information helped independently validate reasons offered by interviewees for pursuing affiliation agreements as well as prioritization of projects selected for implementation post affiliation.
For the selection process, researchers visited the Center for Rural Pennsylvania staff and presented the 22

[25] Lantz, Paul M. et al. (1998). Socioeconomic Factors, Health, and Morbidity. *JAMA.* Vol. 279 no. 21:1703-1708. Pampel, Fred C. et al. (2010. Socioeconomic Disparities in Health Behavior. *Annual Review of Sociology.* Vol 36:349-370.
[26] A standardized variable (sometimes called a z-score or a standard score) is a variable that has been rescaled to have a mean of zero and a standard deviation of one.

identified hospital systems. Each hospital system was considered for its potential contributions to this project. Special attention was given to the variety of characteristics that each system displayed. The Center for Rural Pennsylvania and project researchers then decided on a list of five hospital systems. The following hospital systems were selected: Laurel Health System; Wayne Memorial Health System; Shamokin Area Community Hospital; Penn Highlands Healthcare; and the Tyrone Regional Health Network. Figure 1 below identifies each of the five hospital systems and their respective service areas.

Figure 1. Location of Five Hospital Systems



To better understand the five hospital systems chosen for this study, researchers developed a rural community health capacity data set. Unit-level demographic information was collected and evaluated, such as, but certainly not limited to, population health status measures, identified health disparities,

median home values, median household income, race, age and education attainment. Healthcare system characteristics, such as number and type of healthcare institutions and providers, institutional cost and quality measures, measures of institutional financial sustainability, shortfalls in available healthcare resources relative to other settings, and identified healthcare service needs, were also collected.

Primary qualitative data were gathered through face-to-face interviews. Prior to scheduling the first of two visits per individual health system, the researchers asked representatives from the Pennsylvania Association of Community Health Centers and the Pennsylvania Office of Rural Health to reach out and introduce both researchers and the study. During site visits, the researchers conducted interviews with key stakeholders from the selected hospital systems. More often than not, the secretarial staff at each site graciously organized a full day of interviews during each site visit. Stakeholders for this project included senior administrators, board representatives, physicians (when available), department managers, outreach coordinators, community members, and other medical professional representatives associated with the health system. Over the course of 12 months, researchers drove 3,438 miles (57 hours) to 10 different sites, interviewed 48 stakeholders in 34 interviews, totaling 60 hours of digital records and approximately 800 pages of transcribed data.

The researchers used a semi-structured interview scheme (See Research Document B). Interviews ranged from 60 and 90 minutes in length and took place in health system offices. All interviews for this study were digitally recorded and transcribed by research assistants. All written documentation remains stored in the office of the principal investigator. The researchers strive to maintain confidentiality in the use of their data. Toward that end, efforts were used to protect interviewees so that no data or information would be linked to any individual that could reveal his/her identity. Statements used in the study, where appropriate, refer to subjects through the use of general professional titles. Names of some senior administrators were used, where needed, in order to give credit to pivotal leadership changes and positive health system outcomes. Finally, in an effort to maintain accuracy of the data, and to be considerate of

issues of sensitivity, completed cases studies were shared with at least one senior administrator from each site. Edits were made to the final case study based on feedback from individual health system representatives.

During these interviews, the researchers questioned participants about their perceptions of organizational change and whether that change/alliance produced community benefit (community health capacity). Toward this end, the researchers explored participant views on improved community health capacity and any changes to capacity brought on by healthcare organizational alliances. Participants were also asked to address the introduction of any new service delivery models or expanded services in response to community need; they were also asked to comment on the perceived link between these new models, recommended practices and organizational change.[27] Participants were questioned about patient satisfaction and use of services. Finally, participants were asked to comment on changes to the quality, efficiency and accessibility of healthcare services brought on by the healthcare alliance. The interview scheme used in this study was ordered by four themes: from perceptions and evidence of change in rural community health capacity, to consumer satisfaction and financial stability—the latter two were documented through secondary data but also contextualized through interview data. These four themes encapsulate the qualitative measure of healthcare alliance success used in this study. To be "successful," each healthcare region/district demonstrated a perceived positive change within each of the four above themes.

[27] The researchers relied on published research on rural healthcare "best practices" publicly available through the Health Resources and Services Administration Office of Rural Health Policy and its network of Rural Health Research and Policy Centers. These findings were vetted with representatives of the Pennsylvania Office of Rural Health to ensure their appropriateness to rural Pennsylvania.

Case #1: Laurel Health System: An Affiliation through a Membership Substitution Agreement

Case Summary

In 1987, Soldiers and Sailors Memorial Hospital (SSMH) completed a strategic plan and initiated actions to ensure its long-term survival. Hospital leaders envisioned the institution as the backbone of a care system bringing continuity to the delivery of health and human services in order to improve the health status of those living within its service area. The SSMH community health governance model was groundbreaking and subsequently recognized as an innovative way of maximizing limited health and human services resources within a rural community.[28] [29] The first opportunity to realize the SSMH vision occurred in 1988 when a nonprofit health and human services organization in the county approached the hospital to discuss a possible affiliation. North Penn Comprehensive Health Services operated five FQHCs and also provided mental health programs, home health services, non-medical services for the aged, a Head Start program, and a residential youth program. Mutually committed to improving community health through education, prevention and increased access to care, North Penn and Soldiers and Sailors Hospital signed a letter of intent to collaborate in July 1988. Within several months of this agreement, the hospital signed a 3-year contract to manage North Penn. The strength of the relationship grew in short order as each entity realized the potential as equal partners of developing an integrated system. To further pursue this vision, the two organizations formerly affiliated in July 1989 creating the Laurel Health System (LHS) as a holding company to oversee North Penn, the hospital and hospital-related ventures. In 1990, with the goal of extending the system's care continuum, the LHS began to provide management services to a skilled nursing facility, the Green Home, in Wellsboro. And, in 1994, the Green Home became an affiliate of the LHS. From a governance perspective a critical advancement in the evolution of LHS took place in 1996. To better prepare for the future, LHS pursued several interrelated goals to improve system solidarity and efficiency. These goals included the consolidation of

[28] Alfero, C., Coburn, A.F., Lundblad, J.P., MacKinney, A.C., Mcbride, T. D., Mueller, K.J., Weigel, P. (2014). *Advancing the Transition to a High Performance Rural Health System.* Iowa City, IA. Rural Policy Research Institute.
[29] Alfero, C., Coburn, A.F., Lundblad, J.P., MacKinney, A.C., Mcbride, T. D., Mueller, K.J., Weigel, P. (2015). *Care Coordination in Rural Communities: Supporting the High Performance Rural Health System.* Iowa City, IA. Rural Policy Research Institute.

the affiliate boards into a single governing body; the increased integration among physicians and the system; a reinforced commitment to community partnerships; and the creation of a community health plan capable of serving as a vehicle for shared risk in managed care plans. Each of these goals was reached as evidenced by the LHS organizational structure and notes presented in Appendix B Exhibit B-6. With the governance structure in place, LHS quickened the pace of integration. First, the various management structures of LHS affiliates were reorganized into one management team aligned by function rather than organization. The management restructuring improved communication among system providers and support staff. This action clearly supported the LHS vision of patient focused care across a continuum. Finally, joint strategic planning and central financial management in many ways supported the coordinated effort of affiliates to meet current and anticipated needs of their residents including, for example, the judicious use of resources for capital improvements and the implementation of improved operational processes leading to greater efficiencies. As the Laurel Health System (LHS), the restructured network of providers, in collaboration with other independent and government health and human service providers in Tioga County, offered a broad array of services from 1987 until 2012.

Despite a prolonged run of success, increased competition in a quickly consolidating healthcare operating environment resulted in the merger of LHS with the Susquehanna Health System (SHS) in September, 2012.[30] Although able to integrate key institutional components of the original LHS into SHS, social services and primary care services once part of LHS were not included in the merger with SHS for either regulatory or strategic reasons. These services continue on independently as parts of existing community health and human service organizations. In April 2013, former LHS entities, now part of SHS, progressed forward toward the goal of creating a community healthcare organization by becoming participating member institutions of the RiverHealth Accountable Care Organization (ACO) for Medicare participants.

[30] At the time of the affiliation with LHS, SHS was a Pennsylvania-based health system that included Divine Providence Hospital, Muncy Valley Hospital, and Williamsport Regional Medical Center. SHS served patients from an 11-county region, and was recognized at the national and state levels for quality of care. This regional provider offered a wide array of services that included cancer care, heart and vascular care/heart surgery, neurosciences including neurosurgery, orthopedics, urology, OB/GYN, gastrointestinal services, behavioral health, physical rehabilitation, home care, long term care, assisted living and paramedic/ambulance services. Since the affiliation with the Laurel System, SHS has moved forward with its consolidation efforts and effective October 17, 2016 became part of the UPMC network of providers.

SHS remained a RiverHealth ACO partner until the ACO suspended operations in February, 2016.[31] Although ACO activities ceased in the near term, other efforts at regional consolidation did not. In October 2016, SHS joined the University of Pittsburgh Medical Center (UPMC) becoming UPMC Susquehanna.[32]

The story of LHS in many ways charts the uneven advancement of healthcare financing and delivery reform in the United States over the last 40 years. Driven by a common belief formed as early as the 1980's in the holistic nature of health, LHS cared for those within its immediate community through the development of a network of health and human services. Health industry regulatory and financing mechanisms at the end of the 20th century created barriers to sustaining this innovative model of care. Increasing operating costs triggered by regulatory requirements and technological advancements, declines in reimbursement rates, the challenges of recruiting and retaining healthcare providers, and increasing competition inevitably lead to a strategy of regional consolidation. The ability to access human, technical and financial resources and to drive operational efficiencies, as the result of the consolidation, allowed Tioga County providers to continue their work. Reform initiatives at the beginning of the 21st century, spurred on by ACO development provisions, have further incentivized healthcare providers to assume greater accountability for the health of the populations they serve by more efficiently and effectively managing their consolidated resources. Participation in the RiverHealth ACO represented a new and more reasoned operating model of healthcare, one grounded in "value not volume." As part of a central Pennsylvania ACO, SHS targeted health promotion, disease prevention, and the provision of appropriate care. Although RiverHealth ACO is no longer operational, SHS's new affiliation with UPMC should create opportunities to continue providing quality, safe and low-cost care and other methods to promote good health for all patients. Ironically SHS efforts to partner represents a return to the healthcare

[31]River Health ACO is a partnership between Harrisburg-based Pinnacle Health System and Williamsport, Pa.-based Susquehanna Health. River Health has been part of the Shared Savings Program since 2012 and serves about 33,000 beneficiaries not covered under a Medicare Advantage plan. In its last year of reporting (2014), it had shared losses of about $96 per enrollee. In February 2016, RiverHealth announced it would no longer pursue CMS' Next Generation ACO because internal projections indicated that the ACO would not be able to meet the current target set by CMS."

[32] The merger with UPMC came after this research and writing was completed. Therefore, it is noted here for informational purposes only and is not part of the overall case analysis.

philosophy held by LHS at its inception – providing care to Tioga County's residents in a responsive and comprehensive way. The success of the alliance between LHS and SHS to date may be traced to several key determinants. First, the ability of Tioga County community leaders to galvanize service providers around a common mission of providing care to their residents is of critical importance. Second, the strategic management skills of LHS senior management staff, particularly its ability to act in a proactive way as markets changed, is a significant reason for success; board support positively influenced outcomes. Finally, selecting a strategic partner that provided complementary resources and capabilities, and, most importantly, shared the same beliefs and values led to positive gains as well.

The Community Served

The main campus of the Laurel Health System (LHS) is in the county seat of Tioga County, Wellsboro. From its primary location in central Tioga County, LHS provides health services to communities throughout the county. The geography, history and current social and economic conditions of the service area in many ways are consistent with those of other Pennsylvania northern tier rural communities. A significant proportion of the 35,870 residents currently living within the sparsely populated LHS service area reside in Wellsboro and two other Tioga County ZIP codes near Wellsboro—Mansfield and Westfield . The LHS service area is primarily white (97 percent). The median age of an LHS service area resident, not including student of Mansfield University, is 44.5 years, significantly above the Pennsylvania average of 40.4 years. Over two-fifths (45.6 percent) of this population achieved an education beyond high school approximating the just over half, 52 percent, of all those living in Pennsylvania. With regard to income from all sources, the average Pennsylvania household income is $72,210. It is lower in the LHS service area at $58,234. Over the last 200 years, the area has experienced economic booms and busts inevitably linked to the exploitation of the region's natural resources. Recently the area experienced an economic resurgence related to natural gas extraction from the Marcellus shale reserves abundant in the area (See Appendix A).

Community Health Status, Needs and Resources

The health status of LHS service area residents is in line with the average health status of all those residing in Pennsylvania. This finding is supported by publicly available health behavior, morbidity and mortality data (See Appendix B Exhibits B-1, B-2, B-3). The combination of the area resident's socio economic status and health status reveals a community with healthcare needs in line with the needs of an average rural Pennsylvania community and the economic resources available to access care comparable to those available within the average Pennsylvania rural community (See Appendix B Exhibit B-4). Identified healthcare concerns for the community include: the need for affordable and accessible primary and specialty healthcare services; the need for additional mental health services; and increased local availability of oncology services. At the time of the affiliation the availability of healthcare resources within Tioga County were below state averages. While the primary source of care within Tioga County is the Laurel Health System, there are also a variety of other health-related organizations available to meet community needs (See Appendix B, Exhibit B-5).

Factors Leading to Affiliation

Writing in 1998, Professor Alan Zuckerman – a nationally recognized health policy expert – described the Laurel Health System (LHS) as an "exceptional example of community service integration."[33] "The system," Zuckerman explained, "is cited as a model of collaboration and integration resulting in a unified system of health and human services for a medically underserved region of the country."[34]

The LHS continued along this path for another 10 years, meeting or exceeding standards in a variety of performance measures. Yet, while the hospital continued to achieve financial and clinical successes, it became clear to the administrators and board members that changes in the local and national healthcare marketplace were well underway, and that the LHS should keep its eyes on the future. As early as 2005, with other small, rural hospitals affiliating with larger systems, LHS board members began discussing the idea of affiliation. However, they were not certain if it was yet needed. LHS brought in consultants and

[33] Zuckerman, 1998, p. 87.
[34] Ibid., p. 90.

conducted a strategic plan in 2005, and then again in 2009, they established goals for the organization, looked at assumptions about the future, talked with people in the community and looked at state and national healthcare trends. The underlying purpose of the plan was to better understand past successes and failures, determine what factors are subject to the system's control and influence, and identify how external forces may affect the system in the future.[35] This effort ended in an environmental assessment.

The environmental assessment explored both internal and external aspects of the LHS. Internally, LHS evaluated its mission and vision, reviewed data on utilization rates of major services and financial performance measures, and identified its competitive advantages and disadvantages through a S.W.O.T. analysis. In its external analysis, LHS considered evolving demographic, economic and health status conditions and reviewed changes in healthcare reform legislation, reimbursement changes, EMR requirements and technological and pharmaceutical advances. Its competitors—Guthrie Health, Susquehanna Health, and Geisinger Health System—were also identified and assessed.

From this overall analysis, LHS developed a picture of the future environment—an explicit set of underlying assumptions—on which to base the strategic plan. LHS envisioned the following future:

1. Population of our service area will likely increase.
2. Competition among community and regional providers will increase due to financial pressures.
3. Pharmaceutical and technological advances will continue to shift healthcare delivery to outpatient or primary care settings.
4. Recruitment and retention will require increased financial resources.
5. Significant government involvement (increasing rules and regulations) will require a higher level of time and resources.
6. Both state and federal government reimbursement will decline with healthcare reform legislation.
7. Referrals and reimbursement from county agencies are likely to decline.
8. Professional liability insurance costs are likely to increase for physicians.

[35] LHS 2010 Strategic Planning Process document.

For LHS, the most significant product of this strategic plan was the development of a list of "trigger mechanisms." These were the criteria it established that, if/when present, would accelerate the need to form a strategic alliance with a regional health system. The trigger mechanisms defined four separate but related scenarios related to quality, finances, recruitment, and competition.

1. LHS would need to affiliate with another system if its Board of Directors was dissatisfied with the quality and safety of services provided, and/or if the PA Department of Health, the Joint Commission, or any other regulatory agency found LHS services below quality standards.

2. Similarly, an affiliation would be triggered if LHS failed to meet its financial indicator benchmarks or were unable to obtain capital to meet service objectives.

3. If it were unable to recruit and retain qualified physicians or other professional staff.

4. If a new or existing provider entered or expanded services in competition with LHS.

As the first decade of the 21st century drew to a close, LHS administrators began to witness a number of strategic assumptions play out in a "confluence of events," with both short-term and long-term implications for the future of LHS. North Penn, the human service and primary care arm of LHS, began to create concern for LHS at this time. Although LHS combined financial performance was consistently positive, the financial performance of North Penn's two units—clinical and human service—was not.[36]

Although LHS administrators believed the system was resilient enough to address short-term financial stresses, a significant issue for any rural healthcare organization, and one of the few areas LHS could not easily remedy, was physician recruitment. Stopping the outmigration of patients to other health systems with greater specialty resources, and finding ways to bring those specialties to the LHS, was the only way, many administrators believed, LHS could be financially viable. But for small, rural hospitals, with varying patient specialty care needs, having only one specialist presents two problems. First, there may

[36] North Penn Comprehensive Health Services operated five FQHCs and also provided mental health programs, home health services, non-medical services for the aged, a Head Start program, and a residential youth program.

not be enough patients to keep a specialist occupied, and therefore, profitable. Second, many physicians coming out of training have always had other peers around them to lean on with questions or for advice. "They've always had somebody looking over their shoulder," explained a senior administrator. "Now, there's nobody there. It's all on them," he continued. "It scares them; it really does." Administrators strongly believed that if they could just get physicians to visit, they would be hooked, that they would fall in love with the community and its outdoor recreation opportunities. But without increased financial resources to recruit and sustain specialists, who, according to one senior administrator, could make 25 percent more salary elsewhere, LHS was unable to compete with larger health systems, making it difficult for LHS to promote Wellsboro, PA and its offerings.

In the end, however, "the elephant in the room," as one senior administrator aptly put it, was Guthrie Health System (GHS).[37] LHS had for many years worked closely with GHS. Indeed, LHS worked closely with all three major health systems in the region: GHS, SHS, and Geisinger. One administrator jokingly referred to LHS as "Switzerland," referencing its willingness and experience in working with others. GHS physicians were all on the medical staff at LHS. Both organizations were there to serve the community, so thought LHS administrators. LHS purposely chose not to compete with GHS; rather, they would work in harmony for the community, with LHS going so far as to buy real estate, build a medical office center, and lease the space to GHS. "We really took a very collaborative position with them," admitted a senior LHS administrator. "The best thing for the community was for us not to compete. And that worked for a long time." That is, until the leadership changed at GHS. Soon GHS adopted a more adversarial stance and moved out of the LHS office, building its own, larger medical center with a full menu of ancillary services. They brought in their own specialists and referred only Emergency Room patients to LHS, choosing instead to send patients with elective needs 90 minutes away to their hospital in Sayre, PA. This had a negative financial impact upon LHS.

[37] Guthrie Medical Group is a multispecialty group practice that was founded in 1910 by Dr. Donald Guthrie. Today, Guthrie has more than 295 primary and specialty care physicians and 175 advance practice practitioners that provide comprehensive care for 200,000 patients in 25 regional offices and three hospitals in the Twin Tiers region of northern Pennsylvania and southern New York.

During this period, LHS tried several times to collaborate with GHS, but through those discussions it soon became clear to LHS that GHS wanted to create a situation that would ultimately force LHS to affiliate with GHS; "that we had to affiliate with them because they had pretty much crumbled the infrastructure," admitted a senior administrator. GHS's strong stance, however, only pushed LHS away. It's unwillingness to work with LHS for the good of the community gave LHS a clear view of the incompatibility of corporate cultures. Having now seen GHS in this light, the LHS board was convinced that, if affiliated, GHS would ship many services to Sayre, further weakening the Wellsboro hospital, and this—LHS senior management thought—would not be in the community's best interest. To compete with the powers of GHS, however, LHS knew it had to have a strong partner, someone, as one senior administrator put it, "who could go toe-to-toe "[with GHS] on a true competitive basis. Still, the LHS board agonized over any affiliation discussion. It wondered if it had more time to stay independent, to fight off GHS a little more. But once it reviewed the strategic plan, particularly the trigger mechanisms, the board agreed: "'We need to start talking about affiliation.'"

In an effort to make itself look more attractive, and, strategically, to invest in itself in a way that might not have been supported by a potential suitor once affiliated, LHS obtained a $14 million dollar capital loan from local community banks and used it to build a new Emergency Room and new same-day surgery center; it did all of this before formally reaching out to potential suitors. Indeed, these capital improvements were approved by a board that, in some ways, still held out hope to remain an independent hospital. "We knew that if we ended up going into an affiliation," a former senior LHS administrator explained, "they may have a different vision of what was needed, and we needed to get everything done. We needed," she continued, "all of our facilities in the best shape they could be so we didn't get in the queue of a big system who had multiple other responsibilities and where they may not see this as their priority."

As evidenced by their capital investment decisions prior to actively seeking an alliance, LHS set its

organization apart from many other rural hospital affiliations in Pennsylvania by purposefully placing the health system in a position of strength prior to seeking a suitable healthcare mate. Rather than calling for help when they were in severe financial and clinical distress, LHS began reaching out while still profitable and healthy. Beyond its financial assets, LHS also believed it had something important to offer a suitor. Many of the physicians at LHS referred their patients out-of-the-system because of the limited array of specialty care directly offered by LHS. These referrals would support a larger hospital system and thus provide immediate revenue streams for the affiliating hospital.

The Partnership Process

The LHS position, as a profitable and clinically strong organization, not only gave its board and senior management team negotiating power in a potential affiliation, it also gave its administrators some space to both identify successful affiliation traits that were time-tested, and to identify what would work best for their organization and community. These factors would guide their search. LHS wanted a partner who understood its culture, someone who particularly understood rural community medicine where local hospitals, and their community-centered boards, are committed to serving community. It wanted someone who would invest in Tioga County, not just draw resources from the community and health system. "Compatible culture," as one board member put it, was "the biggest word that has been part of our vocabulary through this whole process." LHS spent 1 year assembling the information it needed to construct a Request for Proposals (RFP), distributed the RFP to potential suitors – Geisinger Health System, Guthrie Health System and the Susquehanna Health System – and began interviews soon after.

After a while, it became increasingly clear which suitor best matched LHS. Geisinger's visit consisted only of the COO. Guthrie brought its medical staff president and the hospital system CEO. Neither hospital system brought members of their boards. Neither spoke of pride in the community. The approach of both was, "we'll acquire you and this is what you will be," remembered one senior administrator. "And they wouldn't commit to anything long-term; it would all depend on return on investment (ROI)."

Susquehanna's interview was different. Members of the SHS community board attended meetings. Members of the LHS community board blended well with the SHS community board. In addition to board and management representation, the LHS medical staff also had a team representing it during the interview and negotiation process with Susquehanna. "Regardless of what you put on paper," explained one board member, "you can never contract for every situation. You must have a lot of trust and I think the board had it with Susquehanna." In the end, the board and medical staff unanimously supported the relationship with Susquehanna. SHS had successfully worked with LHS through an IT service agreement[38]; demonstrated a long-term commitment to the LHS community moving forward; and, affirmed a willingness to work in a truly collaborative manner as partners. The Wellsboro community, too, supported this decision with little, if any, resistance.

For Susquehanna, LHS presented an opportunity to increase its service reach and influence both immediately north and west of Williamsport in partnership with a healthcare organization that shared similar beliefs and values. In July 2011, with both parties poised to move forward, SHS and LHS signed a nonbinding letter of intent to explore a potential affiliation. Following nine months of due diligence activities, the two systems signed a definitive agreement to affiliate in April 2012. LHS's integration into SHS in Williamsport, PA, became effective Sept. 1 after receipt of regulatory approval.

The final affiliation between SHS and LHS was structured as a membership substitution/stock transfer arrangement**.** In this instance SHS assumed the liabilities of LHS and became the sole member of the new corporation. The LHS entities integrated into SHS included: Soldiers and Sailors Memorial Hospital, The Green Home, Laurel Reality, Laurel Management Services, Tioga Healthcare Providers, Tioga Management Service Organization, Tioga Carenet, and the LHS (see Exhibit 14). Northern Penn Comprehensive Health Services was not included in the affiliation and continues to operate within Tioga County now as a separate entity. The independent community health partnership, Tioga County

[38] The Susquehanna Health System had an ongoing contractual arrangement to support LHS information technology systems at the time of the RFP. The arrangement had been in place for 10 years.

Partnership for Community Health, was not considered party to the affiliation and remains an independent nonprofit organization fostering cross-sector collaboration to address environmental, social and health issues within the county. The Laurel Health Foundation was also not included in the affiliation and remains independent at this time. Finally, although there is not typically a cash exchange between parties executing a transaction of this kind, as part of the affiliation agreement, SHS committed to fund the building of both the Mansfield Health Center and a new Cancer Center at the Soldiers and Sailors Memorial Hospital.

Without question, SHS found LHS's ability to sustain high service quality and favorable financial performance attractive, especially given LHS's location and size. LHS's ability to negotiate from a position of strength further favorably influenced SHS's perception of the Tioga County provider. The final terms of the affiliation agreement, especially as they applied to organizational restructuring and investment in Tioga County, were clearly influenced by this perception.

The New Organization

The affiliation between LHS and SHS precipitated changes in LHS governance, management and service delivery models that continue today as the two systems work closely to integrate their respective operations. Since September 2012, SHS and LHS staff continue to implement a well-conceived plan to efficiently and effectively integrate the governance and management of the two organizations. Concurrently, LHS developed sensitive and responsive solutions to assist the ongoing operations of services that were once a part of LHS, but now not included in the affiliation. And LHS entities, now part of SHS, serve as important resources within an ACO providing care to older adults throughout northern and central Pennsylvania.

In regard to governance, LHS, now as part of SHS, was initially required to terminate its traditional (non-profit) corporate membership structure.[39] LHS was able to complete this difficult action and maintain

[39] In the U.S., nonprofit organizations are normally formed by incorporating in the state in which they expect to do business. The act of incorporating creates a separate legal entity enabling the organization to be treated as a corporation under law and to enter into business dealings, form contracts, and own property as any other individual or for-profit corporation may do. Much like a

community goodwill. Following the affiliation, a two-board structure replaced the LHS governance model. The parent board of the SHS, of which four members are from LHS (three community members and one physician) now retain certain reserve powers (strategic and financial) over the combined systems. And, an LHS board continues to function, but in an advisory capacity, given the transfer of certain decision-making powers to the parent board of SHS. SHS, however, does not refer to the LHS board as "advisory." They call the LHS board an "operating board." "I think it creates a little bit more integration," explained a senior SHS administrator.

Along with the transition in governance structure, changes were also implemented at the senior management level. The President and CEO of Susquehanna Health remained the CEO of the expanded SHS. The President and CEO of Laurel Health, assumed the role of Executive Vice President and Chief Business Office for SHS. And, the LHS COO, and Soldiers & Sailors Memorial Hospital President, became the new COO of SHS. With the senior management structure in place, the hard work of integrating and strengthening the management structures and processes of the two systems began. Eleven work groups comprised of SHS and SHS representatives formed to address both strategic and operational issues facing the new partnership.

The challenging work of integration was initially spearheaded by the former President and CEO of LHS, and newly appointed Executive Vice President and Chief Business Office for Susquehanna Health, Mr. Ron Butler. To facilitate the integration process, Mr. Butler, both stepped aside and stayed on. "You don't merge organizations and have two CEOs," he said jokingly. "So I agreed to stay for a couple of years to get all of our systems integrated." The process consisted of the structural integration of the governance model, functional integration of the management structure, clinical integration of medical services, and the centralization of a number of other needed services such as purchasing and financing. Transparency

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standard, for-profit corporation, nonprofits can have members. Nonprofit members in some instance exercise control through the direct election of the Board of Directors. Nonprofits may also employ a delegate structure empowering delegates of the membership with the responsibility for board election.

and open communication were important for Mr. Butler.

Of the tasks the teams undertook, highest priority was assigned to clinical integration. The goal was to improve the communication among providers and better coordinate medical services. Mr. Butler was especially concerned with making the transitions between care both smooth and efficient for patient and hospital. He did not want the patient to "switch gears," as he said, as they moved from, for example, primary care in the doctor's office, to acute care in the hospital, to long-term care in the nursing home, to home-care through a health agency.

The process of system integration and standardization has been challenging given the differences in policies and procedures among former LHS entities and between merged LHS entities and SHS. Indeed, in many instances, the integration challenges stem from good intentions. Rather than completely implementing SHS based policy and procedures, SHS—in an effort to foster a collaborative arrangement with LHS—encouraged LHS to adapt policies in hopes that both could find a middle ground that worked for each system. In retrospect, this benevolence at times created more confusion than consistency. Despite some setbacks, progress on integration and standardization continue as revealed in the operational restructuring of SHS.

The organizational structure of SHS, post affiliation, is best described as a "hybrid model," where operating capabilities are located at the local level but there are still important elements centralized within the system and located off site in SHS facilities in Williamsport, PA. The economic value that centralization brings the system is the main factor behind any decision to centralize. For example, SHS centralizes its Human Resources (HR) and Information Technology (IT) departments. "But when it comes to anything associated with direct patient care," a senior SHS administrator stated, "that's decentralized, because we need to have those local leaders have the flexibility to do what they need to do in response to the community's needs." The implementation of this strategy is best evidenced in the current

organizational structure of Soldiers and Sailors Memorial Hospital within the overall Susquehanna Health System structure (see Appendix B Exhibits B-10 and B-11).

In addition to the work associated with system integration, LHS at the same time was committed to finding paths forward for those organizations/services once part of LHS but not included in the affiliation. A primary concern involved redefining on-going relationships with North Penn Comprehensive Health Services.

As much as both SHS and LHS administrators wanted to keep North Penn Comprehensive Health Services, particularly its core services (medical, dental, and behavioral health), as an integrated and formal part of SHS, it was unable due to federal regulations. As a Federally Qualified Health Center (FQHC), at least 50 percent of North Penn's board of directors is required to be health center clients. Meeting this requirement was impractical given that the majority of SHS board members lived and worked around Williamsport, PA, which is located 56 miles from North Penn. Additionally, the remaining non-consumer members of the board must be representative of the community in which the center's service area is located and are to be selected for their expertise in community affairs, local government, finance and banking, legal affairs, trade unions, and other commercial and industrial concerns, or social service agencies within the community. This also created concerns for SHS regarding the influence of local control. And finally even if the two preceding barriers could be navigated, an FQHC, as a community-based independent organization, is under the direct supervision of the Health Resources and Services Administration (HRSA). Therefore, other health entities are prohibited from owning and exercising full control of an FQHC, such as North Penn Comprehensive Health Services.

Despite these regulatory roadblocks, SHS did find a way to legally support North Penn Comprehensive Health Services without being in an ownership position. One legal interpretation stated that if 80 percent of the Boards of Directors of two non-profit organizations are common, they are considered to be under

common control. To achieve common control, the post affiliation LHS Board was installed and serves as the North Penn board of directors. The board members start the meeting as one organization, adjourn, then meet as the other organization. Most importantly, common control enables SHS to maintain the management services agreement that was in place with LHS prior to the affiliation. This permits North Penn to maintain its existing management support services. Of special significance in buffering the transition was the retention of the human resource functions enabling all employees of the separate health centers comprising North Penn to retain their pre-affiliation compensation and benefit structure.

Along with effectively configuring a new and effective relationship with North Penn, LHS senior management put into action plans to spin off a number of social service programs housed within North Penn. These social services were not considered core services of North Penn and had been subsidized by LHS prior to the affiliation. In the end, LHS senior management, working closely with the Tioga County Partnership for Community Health, successfully transitioned a number of LHS social service programs to community partners, or in one instance, established the service as a stand-alone organization.

Finally, the partnership with SHS created an opportunity for LHS services to participate in a cutting-edge model of healthcare provision and financing, an Accountable Care Organization (ACO). ACOs are groups of doctors, hospitals, and other healthcare providers, who come together voluntarily to give coordinated high quality care to their Medicare patients. The goal of coordinated care is to ensure that patients, especially the chronically ill, get the right care at the right time, while avoiding unnecessary duplication of services and preventing medical errors. The purpose and philosophy of this new organizational form resonated with the underlying beliefs and values of the newly expanded SHS.

On April 15, 2013, Susquehanna Health System committed to ACO participation by joining Pinnacle Health System, Susquehanna Health, Family Practice Centers, Annville Family Medicine, North Penn Comprehensive Health Services, and Susquehanna Community Health & Dental Center to form River

Health ACO, LLC for the purpose of improving the cost, quality, access and patient experience for residents of central Pennsylvania. Effective January 1, 2014, River Health ACO began operations in collaboration with CMS to provide Medicare beneficiaries with high-quality care while reducing the rate of growth in Medicare expenditures. This initiative remained in place until February 2016.

For Tioga County this meant dedication to the community of two patient case managers employed by SHS and contracted to RiverHealth ACO. In addition, it included a grant funded patient navigator assigned to the North Penn health centers. The community case managers focus their care on patients who have a [comorbid] condition that have led to them being in the acute care setting two times in the past year, and that their physicians believe they would benefit from some health coaching. Services for these patients are provided within the home setting and include a mix of social as well as health-related services. The goal is to help ensure that the health of the patient is maintained. Ideally, the patient actively participates in reaching this goal. In contrast, the patient navigators are based within the office setting and assist patients actively receiving care transition between places of service in the health system.

Providing health promotion and disease prevention services within a rural community comes with challenges not necessarily experienced in more densely populated areas. These include: the lack of public transportation for patients; the extended distances between patient homes affecting the number of nursing visits per day and overall; and the high number of older adults living alone in isolated settings creating additional concerns about patient safety. To buffer these issues, SHS has been judicious in their selection of case managers. According to SHS administrators, RiverHealth ACO for the SHS service area exceeded expectations from both operational and financial perspectives during its 2-year run, but unfortunately not at the rate projected to meet the increasingly demanding targets set by CMS to receive future financial benefit for the partnership.

Discussion: Community Health Outcomes and Impacts

Based on a review of collaborative activities, it appears real progress was made to address many of the pressing concerns that spurred the merger. A conclusive assessment of the partnership's success, however, requires examination of achievement in four separate but related goals: First, did the partnership result in increased rural community healthcare capacity and positive changes in community's health status? Second, were investments made to increase healthcare capacity based on a documented community need? Third, are new methods of healthcare delivery in line with recommended rural health practices? And fourth, did the partnership improve quality, service efficiency, and accessibility?

Goal #1

Actions to improve the capacity and scope of health resources soon followed the successful completion of the affiliation agreement. More specifically, SHS honored its commitment to invest in a new outpatient facility in Mansfield, Pa., and a cancer center at the Wellsboro hospital. Efforts to increase access to medical care specialists and recruit primary care physicians are ongoing.

Cancer prevalence in Tioga County is considered to be at levels exceeding averages for similar communities. Access to services as a result of travel distances is considered a barrier to care. Prior to the affiliation, patients seeking cancer treatment had to either travel 50 minutes to a Susquehanna Health System center in Williamsport, PA, or 1.5 hours, on challenging mountain roads, to Guthrie Center in Sayre, PA. Both drives had their challenges given the time of day and unpredictable weather conditions. The cancer center in Wellsboro removes this access barrier. The Wellsboro center with a fully operational pharmacy duplicates the Williamsport center—same treatment protocols, same doctors, same process. Patients now have options on where and when they receive care. For example patients who may be hesitant to begin treatment at a smaller location can begin treatment in Williamsport and have their protocols transferred to Wellsboro for follow-up visits. In a related development, SHS is working on establishing an extension center of its highly regarded breast health center in Wellsboro.

The affiliation with SHS has also brought new specialty services to Wellsboro. This action tackled a long-

standing need identified in the community health needs assessment. Among the specialties are oncology, cardiology, ENT, a pathology lab, and dermatology. While the alliance between LHS and SHS certainly improved patient's access to specialists, physician recruitment, particularly primary care physicians, is an ongoing challenge for the health system. "There was some naive thinking the skies would open and doctors would start falling on us," one board member half-jokingly explained. "That didn't happen." The misconception is that a bigger system will make recruitment less challenging. And while a system's size does add value in this regard, it is still a system in a rural community, one that offers fewer cultural and entertainment experiences often found in more favorable urban areas. "We use to recruit for forever," reflected a senior administrator. Today, "we are recruiting for a contract." Still, the largest challenge facing rural health systems is often not the physician, but the spouse. Given the weakened economic climates of many small towns and cities in rural Pennsylvania, not only is there a paucity of retail and entertainment services, there are also a lack of jobs, positions that a physician's spouse could obtain to further his/her own career. "So we get these wonderfully well-educated couples," explained a senior administrator, "but we cannot find the other a job."

Gathering a body of stakeholders together to exchange information and transfer knowledge in an effort to address identified community health service needs is a theme repeated throughout conversations with LHS and SHS administrators. Many of the improvements resulting from the affiliation are outcomes of what one administrator referred to as "sharing that next ring of knowledge." "When you're a little small place," she explained, "you know what you know, and then you get in a bigger place, and they know what they know." Each effort at sharing brings benefit. New and/or adapted processes or programs created to respond to identified needs have helped maintain services, strengthen services, improve service efficiency and improve service quality.\

On a smaller scale, programs were strengthened through encouraging the growth of professional relations. A Wellsboro physician specializing in palliative care joined forces with a nationally recognized palliative

care physician from Williamsport. The two physicians have now created a partnership, one rooted in a mentoring relationship.

Most likely because of the relative short period of the LHS-SHS partnership, there is no documented direct evidence that the new entity has positively influenced population health outcomes. But there are reasons to be optimistic about the new partnership's ability to improve health outcomes for identified groups of patients as well as positively impact overall community health. First and most importantly, LHS leadership decisions and actions have always been based on a holistic view of health, one that includes social, mental, physical and spiritual components. LHS developed a health system that took these aspects of health into consideration. In addition LHS championed the formation of the Tioga County Partnership for Community Health to ensure communication and coordination of care across all of Tioga County's health and human service providers regardless of their affiliation. This network of providers remains in place after the affiliation between LHS and SHS. Building on this institutional foundation, SHS introduced ACO services into Tioga County focused on an identified patient group.

Goal #2

The population healthcare needs of Tioga County, and specifically the LHS service area, have been well documented over time in community health needs assessment reports.[40] Based on the most current needs assessment, identified areas of concern, in order of priority, included:

- Shortage of physicians
- Uninsured residents
- Cancer (second leading cause of death in Tioga County)
- Mental health ("poor mental health days" consistently above U.S. benchmark)

Each of these identified needs, with the exception of "uninsured residents," has been directly addressed.

[40] Community health needs assessments (CHNA) and implementation strategies are newly required of tax-exempt hospitals as a result of the Patient Protection and Affordable Care Act. These assessments and strategies create an important opportunity to improve the health of communities. They ensure that hospitals have the information they need to provide community benefits that meet the needs of their communities. They also provide an opportunity to improve coordination of hospital community benefits with other efforts to improve community health. By statute, the CHNAs must take into account input from "persons who represent the broad interests of the community served by the hospital facility, including those with special knowledge of or expertise in public health."

The opening of the ambulatory care site in Mansfield, Pa., and the ongoing recruitment of primary care and specialty care physicians focus on physician shortage concerns. The opening of the cancer treatment center on the campus of SSMH created greater availability and accessibility for community residents diagnosed with cancer. An example of successful collaboration to maintain service availability of mental health services involved the closing of the behavioral health inpatient unit at the Wellsboro hospital following the merger. To some in the community, it looked like SHS closed down the community's inpatient psychiatric unit. However, the only LHS psychiatrist had resigned, and there were no immediate replacement options. The problem was solved through partnership. A plan was put into place to transport patients from Wellsboro needing inpatient admission to the Divine Providence Hospital inpatient psychiatric unit in Williamsport. Emergency Department case managers were established in the Wellsboro ER, which was staffed with behavioral health nurses or social workers who had staffed the Wellsboro inpatient psychiatric unit. These professionals knew all of the requirements for inpatient mental health admissions, and could work one-on-one with patients, make the needed referrals and set up transportation.

Goal #3

The partnership with SHS created an opportunity for LHS services to participate in a recommended model of healthcare provision and financing.[41] [42] The goal of the RiverHealth ACO was to improve and sustain efficiency and efficacy of care provided patients, especially the chronically ill. Early success was achieved but not at the rate required by CMS. This shortfall led to a voluntary termination of the CMS demonstration project by the lead healthcare organization, Pinnacle Health.

Goal #4

Initiatives to share knowledge resulted in improved efficiency and quality. The collaborative approach

[41] Guyot, M. (2015). *A Rural Hospital Guide to Improving Care Management.* Duluth MN. National Rural Health Resource Center.
[42] Goodspeed, S. W. (2015). *A Guide for Rural Hospitals to Identify Populations and Shift to Population Health.* Duluth MN. National Rural Health Resource Center.

often created efficiencies in the delivery of care. For example, one of the first projects post-affiliation was a physician referral line. This initiative created a doctor-to-doctor communication mechanism, one that was staffed and facilitated by nursing staff. Transporting the patient to Williamsport, however, was challenged by an ambulance service staffed with volunteers. To overcome this issue, they created a protocol that if the local volunteer ambulance could not transport, the paid ambulance service from Williamsport would come to Wellsboro for a pick-up. Soon the SHS in Wellsboro established its own paid ambulance service. Today, the SHS paid ambulance service assists the volunteer service whenever it cannot cover community transportation needs.

An example of clinical quality improvement spurred by system collaboration was the creation of a clinical protocol on managing damage to soft tissue when certain medicines, administered intravenously, miss the vein and enter the surrounding skin. Prior to the new policy, a physician order was required to respond to the issue. The response to these types of incidents varied, but a slow response often led to surgery. “It does not happen often,” an administrator stated, “but when it does, it’s devastating.” Medicines can be administered quickly to prevent such damage. To address this issue, a frontline staff subcommittee, spanning all four-hospital campuses, developed a protocol that put a plan immediately into play when such an event occurred. Physicians would be informed, but communication would not be an obstacle in the delivery of care. “Not that we wouldn’t have done that,” reflected one Wellsboro Hospital administrator on the likelihood of such a protocol without SHS, but, he continued, “[SHS] offers resources that you normally wouldn’t have,” allowing the protocol to be developed more efficiently and implemented more quickly.

Closing Remarks & Lessons Learned

As summarized above, the partnership between LHS and SHS may be deemed a success on many levels. Interviews with senior administrators and board representatives point to a common core of strengths that, when taken together, underline the successful outcomes inherent in this partnership, namely: persistent

leadership, an engaged board, and a common culture. “This sounds like soft and fluffy,” explained a senior administrator, reflecting on the affiliation. “You read about it, you write about it, you teach it, but when you live it, this affiliation happened because of leadership.” Ron Butler, former President of LHS, stepped aside as SHS came in, and for 18 months, worked to transition LHS into SHS, work group by work group, policy by policy. Many praised the leadership of SHS CEO, Steve Johnson. They found him approachable, available, involved, respectful, and committed to a successful relationship.

In hand with management leadership, success depends upon board commitment and focus. “Bad board, bad outcomes,” summarized one senior administrator. “You have to have good board leadership,” she continued. A common theme throughout the interviews was a commitment to improving community health. From the board to system administrators, many strived to put the community first; this philosophy is rooted in a common culture, one that administrators tried to foster from the very beginning.

Finally, two critical strategic actions have transpired since completion of field research. As noted, **t**he Pinnacle Health Susquehanna Health partnership in the RiverHealth ACO ended. And, the Laurel Health System has once again participated as part of SHS in a consolidation. This time the small community health system, which was independent as recently as 2012, now finds itself part of a nationally recognized health system encompassing a significant portion of western and north central Pennsylvania. Susquehanna Health System’s decision to become part of UPMC is multifaceted. But, without question, part of the decision involved obtaining access to the type of financial resource needed to improve the quality and scope of services provided in Lycoming and Tioga counties. UPMC is making a $500 million investment in the newly named UPMC Susquehanna as an early demonstration of its commitment to expand services for the people of north central Pennsylvania. The first area of focus for UPMC Susquehanna is to expand emergency, heart and vascular, and cancer services. Other strategic priorities include establishing a neurosciences center of excellence, improving access to care with an urgent care network, and replacing an inpatient rehabilitation facility built in the 1960s.

Appendix A: The Community Served

Exhibit A-1 Population Density

The table depicts population density by ZIP code within LHS's primary service area. The values represent the distance in standard deviation (77 residents per square mile) from the Rural Pennsylvania Mean Population Density per Square Mile (110 residents per square mile). The table depicts communities with population densities per ZIP code for the most part below the state mean for rural communities. Population dispersion directly impacts a health system's ability to provide timely and convenient service in an economically sustainable way. In this instance the population concentrations increase time and distance access barriers common in many rural communities.

ZIP Code	Description	County	Density per Sq. Mile	Square Miles	Population	Z Score Based on Mean Rural Pa. Density
16901	Wellsboro	Tioga County	44	232.54	10243	-.92
16912	Blossburg	Tioga County	70	25.27	1776	-.56
16917	Covington	Tioga County	32	44.47	1437	-1.09
16920	Elkland	Tioga County	211	9.52	2006	1.40
16928	Knoxville	Tioga County	40	34.47	1387	-.98
16929	Lawrenceville	Tioga County	50	46.22	2320	-.84
16933	Mansfield	Tioga County	77	97.46	7488	-.46
16935	Middlebury Center	Tioga County	25	50.03	1256	-1.18
16936	Millerton	Tioga County	43	48.26	2095	-.93
16946	Tioga	Tioga County	40	61.56	2484	-.98
16950	Westfield	Tioga County	29	114.63	3378	-1.13

Source: U. S. Census Bureau (2014 American Community Survey) (Population data).

Exhibit A-2 LHS Service Area Socio-Economic Data

		Wellsboro	Blossburg	Covington	Elkland	Knoxville	Lawrenceville	Mansfield	Middlebury Ctr	Millerton	Tioga	Westfield		
		16901	16912	16917	16920	16928	16929	16933	16935	16936	16946	16950	Laurel	PA
Population		10,243	1,776	1,437	2,006	1,387	2,320	7,488	1,256	2,095	2,484	3,378	35,870	12758729
Gender:	Male	48.10%	50.70%	50.90%	48.30%	51.70%	49%	47.10%	50.60%	51.50%	50.60%	49.10%	0.48894162	48.80%
	Female	51.90%	49.30%	49.10%	51.70%	48.30%	51%	53%	49.40%	48.50%	49.40%	50.90%	0.51126713	51.20%
Age:	Median	46.3	40.6	42.9	41	41	44.9	28	44.8	45.7	42.4	46.1	41.1	40.4
	18 years and under	20.50%	24.40%	23%	22.40%	24.80%	19.70%	15.90%	22.40%	20.50%	21.10%	20.30%	20.14%	21.50%
	65 years and over	21.60%	17.90%	16.10%	17.60%	17.50%	18.80%	13.50%	17.50%	17.90%	16.60%	19.90%	18.08%	16%
Race/Ethnicity	White	97.40%	98.10%	99.20%	98.10%	98.10%	98.50%	93.90%	99.20%	98.40%	97.80%	98.40%	97.16%	81.90%
	All Others	2.60%	1.90%	0.80%	1.90%	1.90%	1.50%	6.10%	0.80%	1.60%	2.20%	1.60%	2.84%	18.10%
Education	Less than High School	9%	12.20%	15.40%	10.30%	12.60%	12.10%	7.90%	12.30%	13.40%	17.70%	17.90%	11.41%	11%
	High School	40.00%	39.60%	43.40%	49.60%	46.50%	45.00%	39%	45.20%	45.20%	46.50%	50.30%	42.93%	36.80%
	Above High School	50.90%	48.10%	41.10%	40%	40.90%	42.90%	53.10%	42.50%	41.40%	35.80%	31.80%	45.62%	52.20%
Personal Income	Mean Household Income	$62,917	$66,151	$61,376	$50,246	$52,654	$57,055	$56,001	$54,776	$71,487	$54,627	$47,058	$58,235	$72,210
	Per Capita Income	$26,869	$25,228	$23,633	$22,954	$21,999	$24,060	$21,478	$21,020	$26,944	$23,185	$19,672	$23,810	$28,912
Unemployment	Unemployment Rate	3.70%	2.70%	2.50%	4.20%	2.70%	7.40%	5.40%	4.10%	5.30%	4.20%	4.00%	4.36%	5.40%
Health Insurance	Public Health Insurance	33.60%	36.40%	31.90%	39.70%	42.80%	36.50%	31.20%	36.20%	32.60%	39.60%	41.70%	35.26%	31.90%
	No Health Insurance	11.70%	12.20%	12.10%	9.70%	11.60%	10.40%	9.20%	15.50%	10.80%	11.90%	15.00%	11.42%	9.50%
Poverty Status	Family	9.00%	7.80%	4.60%	14.70%	9.90%	11.40%	8.80%	8.90%	8.60%	8.10%	15.50%	9.75%	9.30%
	Individuals	12.90%	12.20%	11.00%	18.00%	15.70%	14.70%	19.90%	10.40%	10.20%	12.60%	20.90%	15.25%	13.50%

Source: U. S. Census Bureau (2014 American Community Survey).

Exhibit A-3 LHS Business and Industry Employment Profile

	Wellsboro	Blossburg	Covington	Elkland	Knoxville	Lawrenceville	Mansfield	Middlebury Ctr	Millerton	Tioga	Westfield		
Business and Industry Sectors	16901	16912	16917	16920	16928	16929	16933	16935	16936	16946	16950	Laurel	PA
Agriculture, forestry, fishing and hunting, and mining	5.10%	5.30%	13.90%	4.30%	13.20%	7.30%	5.30%	7.40%	7.00%	2.90%	7.70%	6.19%	1.40%
Construction	5.60%	7.80%	6.90%	3.00%	9.70%	9.50%	4.20%	7.20%	9.90%	10.50%	6.20%	6.38%	5.70%
Manufacturing	10.70%	17.60%	18.20%	37.00%	18.10%	16.90%	9.30%	11.90%	22.10%	18.20%	22.90%	15.43%	12.20%
Wholesale trade	3.60%	5.10%	0.50%	1.60%	3.70%	1.60%	1.90%	3.60%	1.80%	3.40%	2.30%	2.71%	2.80%
Retail trade	13.10%	17.20%	12.80%	6.90%	8.70%	13.30%	12.40%	10.50%	10.90%	13.60%	9.40%	12.15%	11.80%
Transportation and warehousing, and utilities	5.30%	3.40%	5.40%	4.40%	8.70%	8.60%	2.70%	6.90%	4.80%	6.70%	10.20%	5.48%	5.10%
Information	1.90%	0.40%	2.30%	1.40%	2.30%	1.00%	1.80%	0.70%	1.60%	2.20%	1.70%	1.68%	1.70%
Finance and insurance, and real estate and rental and leasing	5.20%	3.30%	2.60%	6.70%	2.50%	3.80%	3.90%	1.40%	2.70%	2.40%	3.50%	3.99%	6.40%
Professional, scientific, and management, and administrative and waste management services	4.80%	6.00%	5.60%	3.60%	9.90%	5.40%	6.70%	5.20%	7.20%	3.40%	6.80%	5.70%	9.80%
Educational services, and health care and social assistance	28.10%	19.90%	20.10%	16.50%	9.70%	20.30%	30.10%	25.80%	22.10%	22.70%	17.80%	24.32%	26.00%
Arts, entertainment, and recreation, and accommodation and food services	7.20%	8.70%	6.50%	5.60%	3.70%	5.40%	11.50%	8.80%	3.10%	7.30%	5.10%	7.52%	8.30%
Other services, except public administration	4.80%	4.10%	1.70%	6.00%	6.40%	3.50%	6.00%	7.10%	3.60%	4.60%	4.30%	4.90%	4.70%
Public administration	4.50%	1.30%	3.50%	2.80%	3.30%	3.30%	4.20%	3.60%	3.10%	2.10%	2.10%	3.56%	4.10%

Percentages represent civilian employed population 16 years and older residing within primary service area.
Source: U. S. Census Bureau (2014 American Community Survey).

Appendix B: Community Health Status, Needs and Resources

Exhibit B-1 Health Behavior Data

Description	Tioga County (2016)	Pennsylvania (2016)	Tioga County (2015)	Pennsylvania (2015)	Tioga County (2014)	Pennsylvania (2014)	Tioga County (2013)	Pennsylvania (2013)	Tioga County (2012)	Pennsylvania (2012)	Tioga County (2011)	Pennsylvania (2011)
Adult Smoking	20%	20%	20%	20%	20%	20%	20%	21%	21%	21%	24%	22%
Adult Obesity	31%	29%	33%	29%	32%	29%	32%	29%	32%	29%	31%	28%
Physical Inactivity	27%	24%	26%	24%	26%	26%	27%	26%	27%	26%	N/A	N/A
Excessive Drinking	17%	18%	15%	17%	15%	17%	15%	17%	17%	18%	20%	18%
STD (per 100,000)	213.7	407.8	162	431	198	415	167	374	96	346	145	340
Teen Births (per 1,000)	27	27	28	28	28	29	28	29	29	31	30	31

Source: Robert Wood Johnson County Health Rankings and Roadmaps**.**

Exhibit B-2 Morbidity Data

Description	Tioga County (2016)	Pennsylvania (2016)	Tioga County (2015)	Pennsylvania (2015)	Tioga County (2014)	Pennsylvania (2014)	Tioga County (2013)	Pennsylvania (2013)	Tioga County (2012)	Pennsylvania (2012)	Tioga County (2011)	Pennsylvania (2011)
Poor Physical Health Days (ave. in past 30 days)	3.7	3.8	3.1	3.5	3.1	3.5	3.7	3.5	3.3	3.5	3.1	3.5
Poor Mental Health Days (ave. in past 30 days)	4.1	4.1	2.5	3.6	2.5	3.6	4.1	3.6	3.8	3.6	4.5	3.6
Diabetes	11%	11%	11%	10%	9%	10%	11%	10%	10%	10%	10%	9%
HIV Prevalence (per 100,000)	55	290	52	292	52	292	55	293	54	294	55	N/A
Drug Poisoning Deaths (per 100,000)	N/A	N/A	5	15	5	14	N/A	N/A	N/A	N/A	N/A	N/A

Source: Robert Wood Johnson County Health Rankings and Roadmaps

Exhibit B-3 Mortality Data

Description	Tioga County (2010-12)	Pennsylvania (2010-12)	Tioga County (2009-11)	Pennsylvania (2009-11)	Tioga County (2008-10)	Pennsylvania (2008-10)	Tioga County (2007-09)	Pennsylvania (2007-09)	Tioga County (2006-08)	Pennsylvania (2006-08)
Heart*	167.8	181.5	170.6	186.6	186.6	194	179.3	203.2	194.2	215.4
Cancer	174	176.7	170.4	180	176.3	183.8	172.2	187.6	180.1	191.6
Stroke	37.5	38.3	39.3	39.3	39.3	40.1	37.9	42.6	37.4	45.3
CLRD	49.5	38.6	49.6	38.9	43.2	39.9	39.7	40.6	34.2	40
Accidents	43.9	42.3	40.6	40.8	41.4	40.4	34.8	40.8	35.4	40.9
Alzheimer's	10.5	19.2	8.1	19.3	14.6	20.6	16.5	21.4	19.8	22.5
Diabetes	29	20.8	29.9	20.2	25.7	20.4	32.5	21.4	33.6	22.4
Nephritis	15.1	16.9	16.4	17.7	15.9	18.6	16.7	19	18.4	19.9
Influenza	16.8	14.1	18.2	14.7	20.1	15	17.6	16	13.6	17.1
Septicemia	10.7	13.1	12.1	13.7	ND	14.2	ND	15.2	ND	16.2
Age Adjusted Death Rate (per1000)	7.1	7.5	7.6	7.7	7.8	8.1	7.4	8.4		

*per 100,000

Source: Pennsylvania Department of Health County Health Profiles.

Exhibit B-4 Health Access Risk

The data represent population health access risk values by ZIP code within LHS primary service area. The value of each of the rural ZIP codes is standardized to the mean for the combined rural ZIP codes in Pennsylvania. The values represent the distance in standard deviation from the Rural Pennsylvania Mean Health Access Risk value of zero. The average for the entire service area approximates the Rural Pennsylvania Mean Health Access Risk value.

ZIP Code	Description	County	Population	Health Access Risk z-of-z score
16901	Wellsboro	Tioga County	10243	-.299
16912	Blossburg	Tioga County	1776	0
16917	Covington	Tioga County	1437	-.188
16920	Elkland	Tioga County	2006	.012
16928	Knoxville	Tioga County	1387	.147
16929	Lawrenceville	Tioga County	2320	.022
16933	Mansfield	Tioga County	7488	-.047
16935	Middlebury Center	Tioga County	1256	-.149
16936	Millerton	Tioga County	2095	-.243
16946	Tioga	Tioga County	2484	.234
16950	Westfield	Tioga County	3378	.721

Source: U. S. Census Bureau (2014 American Community Survey) (Population data).

Exhibit B-5: Community Health Resources

Description	Pennsylvania (State Total)	Tioga County
HOSPITALS & NURSING HOMES(11)		
General Acute Care Hospitals, 2013-14	**157**	**1**
Hospital Beds Set Up & Staffed, 2013-14	**32,525**	**67**
Beds Set Up & Staffed Per 1,000 Residents	**2.54**	**1.58**
# Nursing Homes, 2014	**701**	**3**
# Total Licensed/Approved Nursing Home Beds, 2014	**88,063**	**266**
Total Licensed/Approved Nursing Home Beds Per 1,000 Residents, 2014	**6.89**	**6.29**
OFFICES OF PHYSICIANS AND DENTISTS(12)		
# Physicians Offices (NACIS 6211), 2013	**8,887**	**19**
# Physicians Offices Per 100,000 Residents, 2013	**69.5**	**44.8**
# Dentists Offices (NACIS 6212), 2013	**5,169**	**13**
# Dentists Offices Per 100,000 Residents, 2013	**40.4**	**30.6**

Sources: Pennsylvania Department of Health (Hospital and Nursing Home data).
U.S. Census Bureau County Business Patterns (Physician and Dentist data).

Exhibit B-6 Laurel Health System Organizational Structure and Services (Prior to SHS Affiliation)

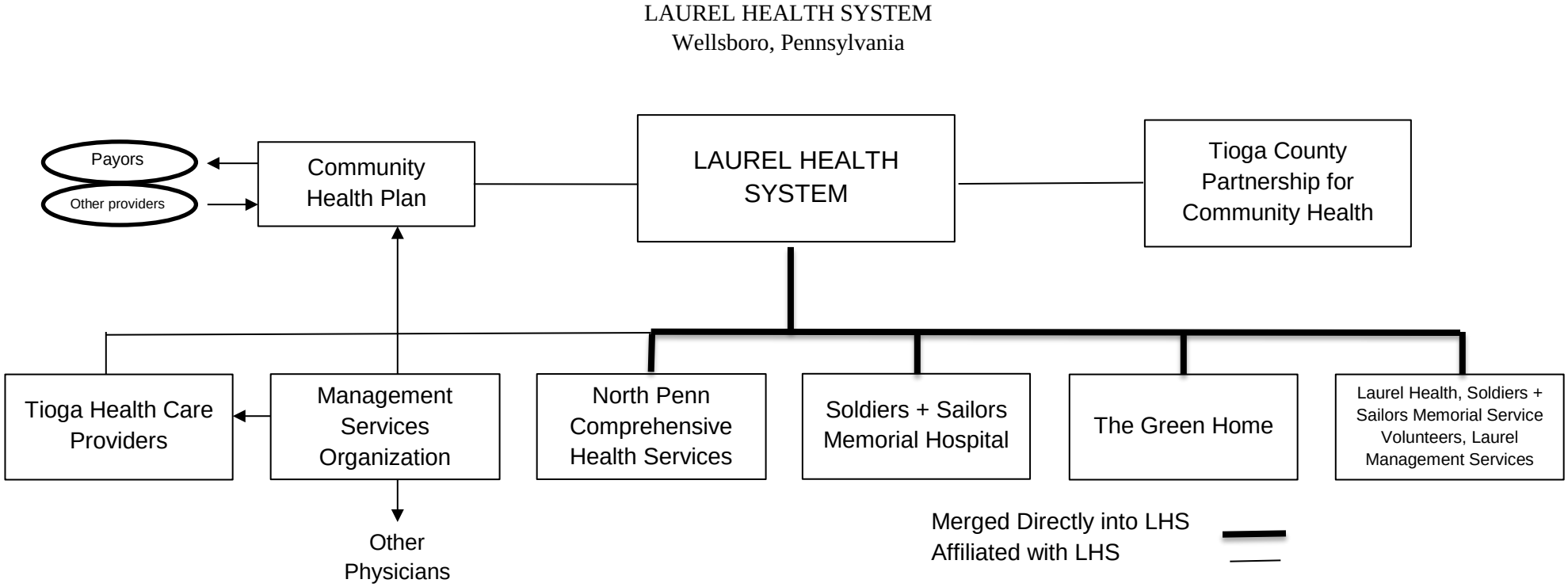


Exhibit B-6 Laurel Health System Structure and Services (continued)

Soldiers + Sailors Memorial Hospital (SSMH)

32-36 Central Avenue, Wellsboro, Tioga County, Pennsylvania • (570) 723-0100

Soldiers + Sailors Memorial Hospital (SSMH) is a JCAHO-accredited, licensed, 83-bed, acute care, not-for-profit community hospital which serves a rural population of over 50,000 people.

Laurel Behavioral Health

32-36 Central Avenue, Wellsboro, Tioga County, Pennsylvania • (570) 723-0530

Based at Soldiers + Sailors Memorial Hospital (SSMH), Laurel Behavioral Health offers four levels of mental health care for patients.

Services include:

- Outpatient mental health counseling and therapy services
- Mental health nursing services through Laurel Home Health / Hospice
- Partial hospitalization program
- A 16-bed inpatient psychiatric care unit

Laurel Home Health/Hospice

24 Walnut Street, Wellsboro, Tioga County, Pennsylvania • (570) 723-0760

Laurel Home Health / Hospice provides health care services to patients in their homes.

Services include:

- Skilled nursing care
- Certified home health aide services
- Care management
- Maternal and child health
- Medical social services
- IV therapy

- Physical, occupational and speech therapy
- Hospice services
- In-home supportive services
- Community referral
- Mental health nursing care

The Green Home

37 Central Avenue, Wellsboro, Tioga County, Pennsylvania • (570) 724-3131

The Green Home is a restraint-free, 122-bed skilled nursing facility which opened on October 29, 1974. Rehabilitation services – physical, occupational and speech therapy – are available. Care is offered on both a short-term and long-term basis.

Laurel Health Centers

The six Laurel Health Centers offer family-based health services provided by family practitioners, general practitioners and specialists in internal medicine, pediatrics and nephrology. Primary health care services as well as special health services and educational programs are available through the Health Centers. Each center provides comprehensive health services for people of all ages.

The Laurel Personal Care Home

Haskins Street, P.O. Box 159, Morris Run, Tioga County, Pennsylvania 16939 • (570) 638-1611

Located in Morris Run, about five miles south of Blossburg, The Laurel Personal Care Home is a 17-bed licensed personal care facility which opened on February 15, 1999. Assistance with daily routines, meals, housekeeping, laundry, maintenance, recreational activities, transportation and medication distribution services are provided.

The Laurels

39 Central Avenue, Wellsboro, Tioga County, Pennsylvania • (570) 723-6860

The Laurels, an assisted living facility, opened on April 1, 1999. Featured are a private dining room, living

room, sunroom, conservatory, and 30 apartments, each with its own kitchenette and bathroom. The one bedroom apartments also include a living/dining area and separate bedroom and the efficiencies a bedroom/living/dining area. Three delicious meals are served each day. Housekeeping, laundry, maintenance, transportation, recreational activities, assistance with daily routines, and medication distribution services are also provided.

Senior Support Services

24 Walnut Street, Wellsboro, Tioga County, Pennsylvania • 1570) 723-0763

Thirteen sites throughout a three-county region provide hot, nutritious meals as well as social and educational activities in a group setting for area seniors. The senior centers are located in the following communities: Elkland, Mansfield, Millerton, Wellsboro and Westfield in Tioga County; Canton, Gillett, Sayre, Towanda, Troy and Wyalusing in Bradford County; and Dushore and Muncy Valley in Sullivan County.

Services include:

- Senior Centers
- Personal Care aides
- Home support services
- Home-delivered meals

Other Laurel Health System Services

- Project Concern
- Laurel Wellness Centers
- Occupational Health & Wellness
- Work Hardening
- Cardiac Rehabilitation
- Residential Services for Persons with Developmental Disabilities
- Tioga County Fit for Life
- Guideline
- Bradford-Tioga Head Start
- Laurel Youth Services (LYS)

Exhibit B-7 Soldiers + Sailors Memorial Hospital Operational Data

Description	2010-11	2011-12	2012-13	2013-14	2014-15
Long Tern Care Unit	No	No	No	No	No
Licensed Beds	83	83	83	67	67
Beds Set Up and Staffed	83	83	83	67	67
Admissions	2761	2765	2753	2371	1903
Discharges	2762	2765	2747	2351	1872
Patient Days of Care	10370	10388	10781	9920	6851
Discharge Days	11072	9822	10780	9868	6816
Bed Days Available	30295	30378	30295	30231	24456
Average Length of Stay	4	4	4	4	4
Occupany Rate	34	34	36	33	28
Live Births	295	283	300	286	306
Inpatient Surgical Operations	646	613	519	511	446
Outpatient Surgical Operations	3106	3043	2939	2949	2888
Total Surgical Operations	3752	3656	3458	3460	3334
Medical Staff (Board Certified)	38	38	38	41	39
Medical Staff (Other)	2	3	3	3	4
Total Medical Staff	40	41	41	44	43

Source: Pennsylvania Department of Health Hospital Statistical Reports.

Exhibit B- 8 Soldiers + Sailors Hospital Financial Data

(000's)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Operating Margin	4.11%	3.92%	2.88%	5.12%	10.11%	9.43%	8.67%	6.49%	8.44%
Total Margin	4.91%	5.04%	2.26%	6.12%	11.57%	9.64%	10.22%	7.05%	9.97%
Operating Revenue	$38,501	$40,163	$42,210	$43,614	$50,733	$50,716	$52,970	$57,186	$58,980
Operating Income	$1,583	$1,573	$1,216	$2,232	$5,127	$4,780	$4,590	$3,714	$4,976
Total Income	$1,889	$2,023	$952	$2,668	$5,868	$4,887	$5,412	$4,034	$5,878

Source: Pennsylvania Health Care Cost Containment Council.

Exhibit B-9 Soldiers + Sailors Memorial Hospital Quality Data

	Patients HighlySatisfied		Recommended Care		Readmission Composite	
	SSMH	PA	SSMH	PA	SSMH	PA
2014	**72.00%**	**69.33%**	**92.99%**	**97.79%**	**NA**	**NA**
2013	**71.25%**	**68.50%**	**97.78%**	**98.55%**	**19.60%**	**19.49%**
2012	**71.25%**	**66.87%**	**97.94%**	**98.23%**	**20.22%**	**20.43%**
2011	**69.25%**	**65.34%**	**96.74%**	**97.67%**	**20.95%**	**21.84%**
2010	**72.25%**	**64.75%**	**95.75%**	**96.25%**	**NA**	**NA**
2009	**70.25%**	**63.34%**	**94.24%**	**95.00%**	**NA**	**NA**
2008	**NA**	**NA**	**NA**	**94.00%**	**NA**	**NA**

Overall Recommended Care (This measure is a weighted average of all the process-of-care, or "core" measures, reported on CMS Hospital Compare)
Percent of Patients Highly Satisfied (This measure is used to assess adult inpatients' perception of their hospital. Patients rate their hospital on a scale from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible. Highly satisfied 7.0-10.0)
Readmission Composite (Average Medicare hospital 30-day readmission rates for heart failure, heart attack, stroke, VTE, and pneumonia)
Source: WNTB.org (Why Not the Best)

Exhibit B-10 Soldiers + Sailors Memorial Hospital Organizational Chart (Post SHS Affiliation)

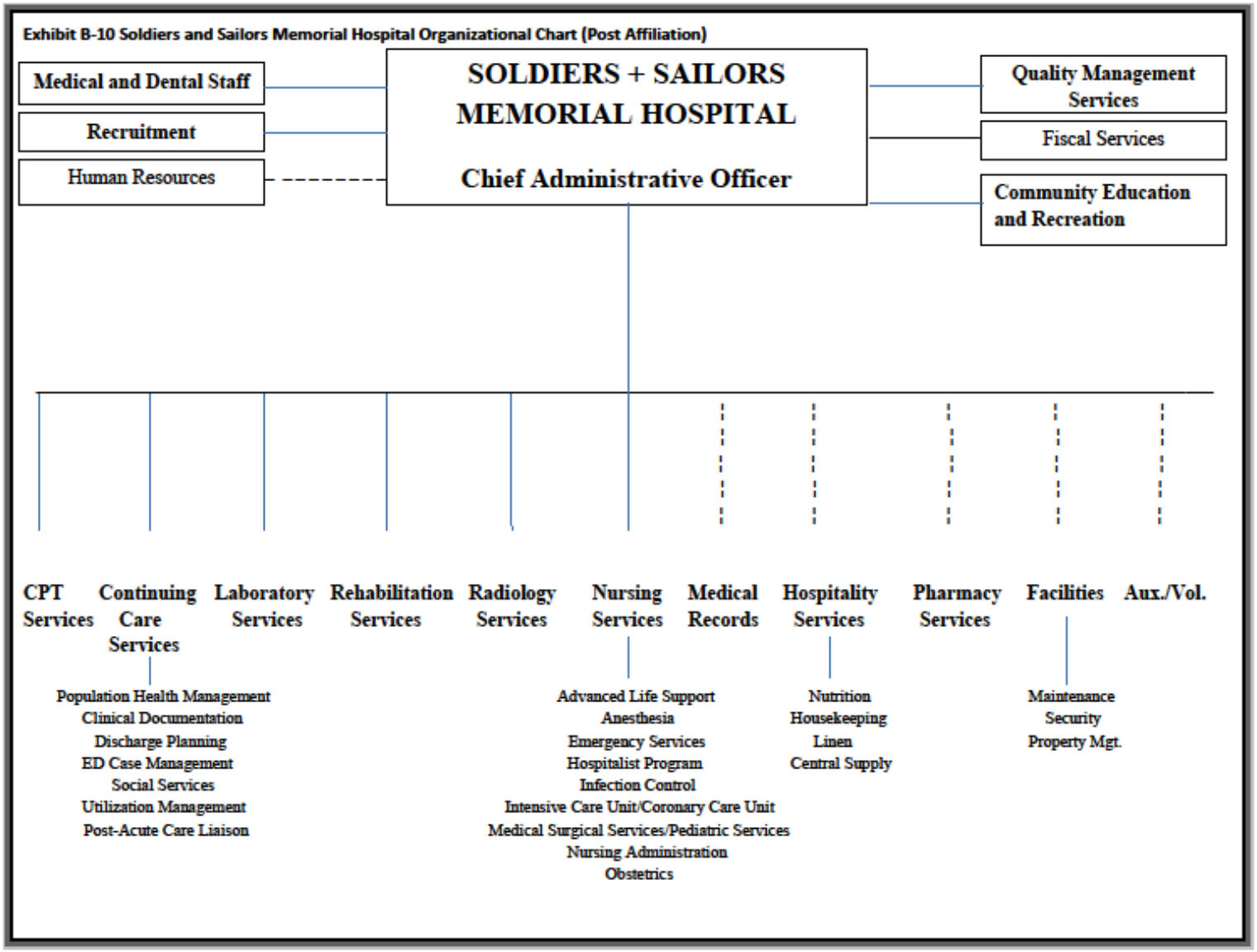
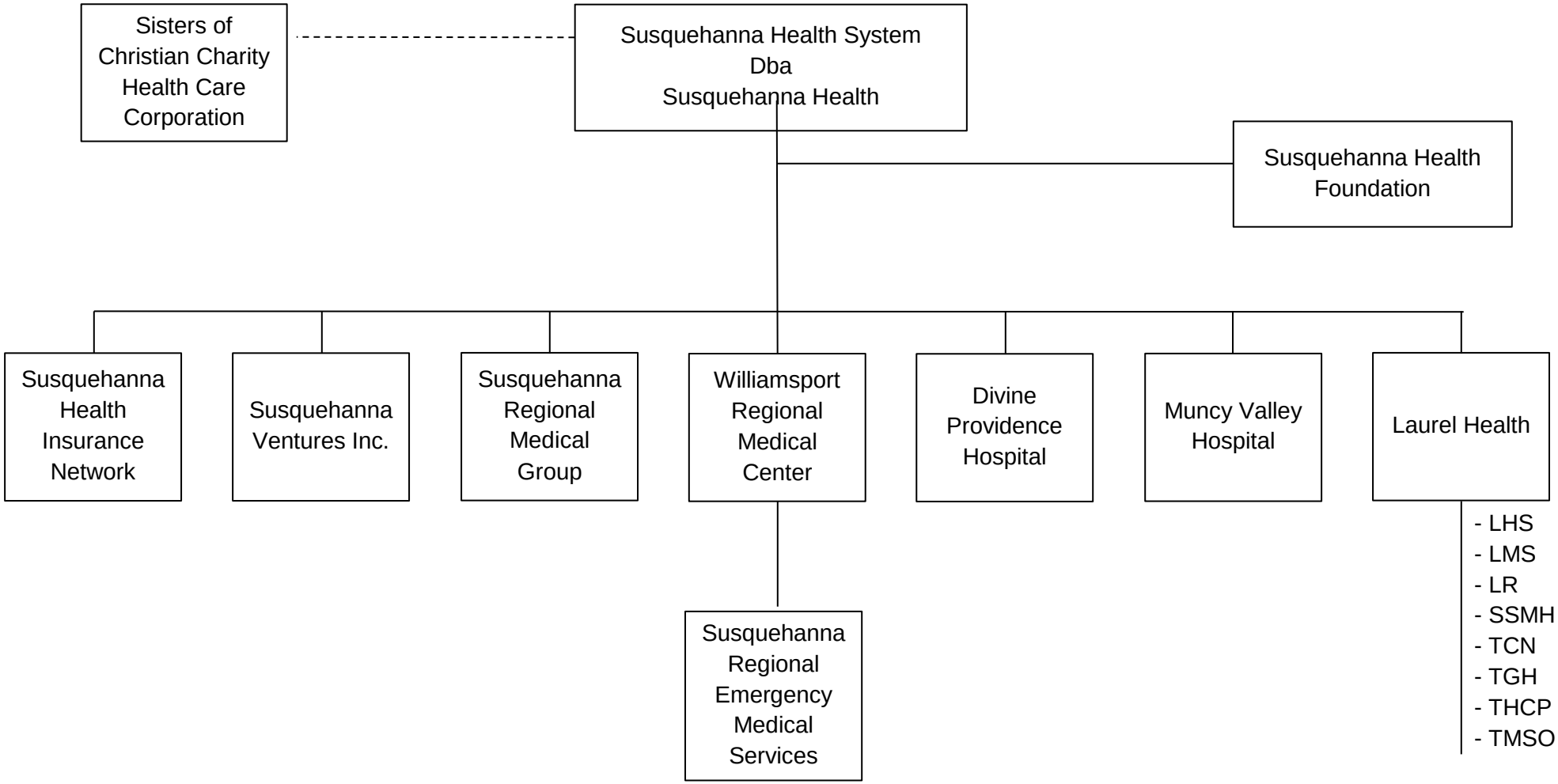


Exhibit B-11 Susquehanna Health System (including Laurel Health System)

SUSQUEHANNA HEALTH
CORPORATE ORGANIZATIONAL STRUCTURE



Case #2: Wayne Memorial Health System: A Cross-Sector Collaboration of Community and Regional Organizations

Case Summary

Honesdale, Pennsylvania, located 32 miles northeast of Scranton, Pennsylvania, is the home of the Wayne Memorial Health System (WMHS). This rural health system comprised of Wayne Memorial Hospital (WMH), Wayne Memorial Long-Term Care (WMLTC), and Wayne Memorial Health Foundation (WMHF) with clinical affiliation to the Wayne Memorial Community Health Centers (CHC). The hospital was founded in 1920 with the dedication of Wayne Memorial Hospital to 55 soldiers from Wayne County who died in service to their country during the First World War. Today WMHS provides a full range of services to residents in Wayne, Pike, Susquehanna, and Lackawanna counties. Similar to other rural settings, WMHS's service area needs include the need for: additional primary care services; increased access to medical specialists; greater coordination of care, especially for chronic conditions; more robust mental health services; and, more services aimed specifically at addressing the increasing prevalence of substance abuse. In addition, as with other rural hospitals and health systems, WMHS must consider its strategic position within a rapidly changing healthcare operating environment. Relative to the strategies of other rural institutions, WMHS has chosen a different path to resolve immediate challenges as well as ensure long-term viability. Within its immediate service area, WMHS has embraced a community governance model of healthcare pursuing a truly collaborative strategy with community partners to meet essential health and health-related needs (medical, dental, behavioral, mental, social) in an increasingly integrated and coordinated way. To address long-term structural concerns, WMHS has entered into a partnership as an equal with a regional health system to develop the knowledge and skills necessary to assume greater accountability for the health of the population within their service areas. Although challenges remain, WMHS has made measurable progress in responding to both short-term challenges and long-term strategic concerns. Interviews with stakeholders point to a common core of strengths that, when taken together, underline the successful outcomes inherent in these partnerships. These include: a shared mission to improve the community's quality of life; a shared belief in

collaboration as the best way to achieve the mission; exceptional strategic leadership within WMHS management and governance structures; and thorough operational knowledge of health and social service public programs that have allowed the various partnerships to exploit these public offerings for community benefit.

The Community Served

Wayne Memorial Health System serves municipalities located in Wayne, Pike, Susquehanna and Lackawanna counties.[43] The combined service area extends approximately 100 miles from its northwest to southeast corners and is home to 135,000 individuals who reside primarily in three of the four counties – Pike, Wayne and Lackawanna. The geography and history of the service area in many ways is consistent with other Pennsylvania northern tier rural regions. As a result, the combined municipalities exhibit characteristics that align with a contemporary rural community profile. Differences in WMHS municipalities, however, become apparent when completing across unit comparisons. There are measurable differences in industry composition, levels of unemployment, household and individual wealth, dependence on publicly sponsored health plans, access to health insurance, and levels of poverty. In rank order, municipalities with more favorable characteristics across the measures are as follows: Pike East, Pike West, Wayne South, Pike South, Wayne North, Carbondale Area, and Wayne Central. Differences in the social and economic characteristics of municipalities present different opportunities and challenges for achieving and maintaining positive community health outcomes (See Appendix A).

Community Health Status, Needs and Resources

The health status of WMHS service area residents is in line with the average health status of all those residing in Pennsylvania but with some subtle differences in morbidity measures, which are increasingly

[43] The researchers combined the municipalities in the Wayne Memorial Health System service area into seven categories as follows: *Wayne North*: Susquehanna, Starrucca, Starlight, Preston Park, Lake Como, Lakewood, Equinunk, Pleasant Mount, and Damascus. *Carbondale Area*: Herrick Center, Union Dale, Lenoxville, Carbondale, and Jermyn. *Wayne Central*: Waymart, Prompton, Honesdale, Tyler Hill, Milanville, and Beach Lake. *Wayne South*: Lake Ariel, Hamlin, Lakeville, Sterling, Newfoundland, and South Sterling. *Pike West:* Lackawaxen, Greeley, Tafton, Hawley, and Greentown. *Pike East*: Shohola, Milford, Dingmans Ferry, Millrift, and Matamoras. *Pike South*: Tamiment and Bushkill.

worse across WMHS communities the further west one travels. This finding is supported by publicly available health behavior and morbidity data (See Appendix B, Exhibits B-1, B-2). The "health access risk value" for each of four municipal groups (Wayne North; Carbondale Area; Wayne Central; and Wayne South) are greater than the average value for all Pennsylvania rural communities. The above average values signify that the healthcare needs of these communities exceed the average needs of rural communities in Pennsylvania and the economic resources available to access care by community members are less than those available within the average Pennsylvania rural community. In contrast, the "health access risk value" for three municipal groups (Pike West; Pike East; and Pike South) are less than the average value for all Pennsylvania rural communities. The less-than-average values signify that the healthcare needs of these communities are below the average needs of rural communities in Pennsylvania and the economic resources available to access care by community members are more than those available within the average Pennsylvania rural community (See Exhibit B-4). With few exceptions, this pattern across the communities is consistent with the socio-economic conditions in the communities as well as morbidity and mortality outcomes.

Over time, community health needs assessment reports have well documented the population healthcare needs of the communities served by WMHS.[44] The characterization of the population, its healthcare status and healthcare access risk described above align with the most recent assessment report completed in 2016. Based on the 2016 needs assessment, identified areas of need common to all communities served by WMHS in order of priority include:

- Behavioral health and substance abuse
- Primary care services
- Specialty care services
- Care coordination for chronic conditions

[44] Community health needs assessments (CHNA) and implementation strategies are newly required of tax-exempt hospitals as a result of the Patient Protection and Affordable Care Act. These assessments and strategies create an important opportunity to improve the health of communities. They ensure that hospitals have the information they need to provide community benefits that meet the needs of their communities. They also provide an opportunity to improve coordination of hospital community benefits with other efforts to improve community health. By statute, the CHNAs must take into account input from "persons who represent the broad interests of the community served by the hospital facility, including those with special knowledge of or expertise in public health."

Healthcare needs for the four-county region in the WMHC market, as stated above, are in line with the needs of other rural communities. The availability of healthcare services in this rural setting varies by county. Combined acute care service resources for three of the four counties (Pike, Wayne, Susquehanna) as measured by acute care hospital bed staffed per 1,000 residents, physician offices per 100,000 residents, and dentist offices per 100,000 residents remain below Pennsylvania state averages. Employing the same measures, acute care resources in Lackawanna County are significantly above state averages, with a high concentration of these resources in the greater Scranton, Pa., area (See Exhibit B-5). Healthcare resource capacity and distribution across these four counties strongly correlate with the identified community health needs outlined above.

A Different Path Chosen

Wayne Memorial Health System (WMHS), in many ways, represents a traditional single hospital health system. But in contrast to other small health systems attempting to survive in an age of mergers and acquisitions by actively seeking to join larger health systems, WMHS has chosen a different path by carving out an independent role for itself in Wayne County, PA. Its ability to do so is grounded in the partnerships it forms with community and regional entities. The primary partners in Wayne County's healthcare landscape include the WMHS organizations, Wayne Memorial Community Health Center (WMCHC, a federally qualified health center), and Wayne County Government. As initiators or supporting partners, these three organizations have collaborated with each other and other organizations to address identified health challenges within the community, and more expansively, within the region. Challenges undertaken include concerns over the availability and quality of behavioral health services, primary care and specialty care services, and care coordination. Provided below is a brief overview of each organization and the nature of their professional relationships.

Wayne Memorial Health System

As a small but growing single hospital system with an increasingly expanding reach, WMHS's success

depends, in part, on the competencies of those in its leadership positions. David Hoff, hospital CEO for the last 16 years, is joined by a system veteran of some 40 years in the CFO position, along with a Director of Nursing and a Director of Real Estate and Facility Services. The board, too, is an important feature of WMHS.

The senior management team and the health system board display an organizational culture supportive of strategic risk-taking toward mission driven initiatives. Their ability to remain nimble, or as one senior administrator put it, "make decisions very quickly," is revealing. WMHS leadership stance on community health issues is evidenced by its efforts to shape public perception of the organization. The public relations department has worked over the years to craft a positive image of the hospital system. Communication between the hospital and the community is a priority. It relies increasingly on social media channels to distribute information.

Wayne Memorial Community Health Centers (CHC)

A prime example of WMHS's willingness to take a calculated risk to improve care within its community and maintain its independence was demonstrated by its persistent effort to receive approval for the establishment of a federally qualified health center (FQHC) from the Health Resources and Services Administration (HRSA). By using this federal program, WMHS planned to increase primary care service accessibility to those in the community at greatest need while potentially creating a place to develop a medical group practice. In 2008, WMHS succeeded in obtaining approval for the formation of the CHC. The relationship between WMHS and CHC is best described as a "dotted-line relationship," as one senior administrator for WMHS stated. To be clear, CHC is independent of WMHS with its own management staff and board of directors. CHC, however, outsources some of its management services, such as financial services, human resources, and information technology, from WMHS. And, as had been planned, WMHS transitioned its employed physicians into the CHC. In addition, the two organizations are linked at the CHC board level. Both the WMHS CEO and CFO sit on the CHC Board of Directors. To remain in compliance with federal regulations pertaining to CHCs, both the WMHS CEO and CFO are

patients at CHC.[45] Having two senior hospital administrators as patients of an FQHC decreases the stigma often associated with federally qualified health centers, whose primary mission is to serve those most economically disadvantaged. WMHS, along with CHC, have fought against this stereotype through the use of strategic marketing and public relations efforts, which work to highlight CHC's economically diverse patient body. "We want to be the provider of choice," stated a CHC administrator, "not the provider of necessity."

At the current time, CHC's 250 employees serve the community at 14 locations throughout the WMHS service area, providing medical, dental, and behavioral health services for the community. WMHS affiliation with the CHC also provides a competitive advantage by creating a higher entry barrier to regional health systems interested in establishing a presence in the WMHS primary service area. WMHS, along with the CHC, directly manage approximately 95 percent of the primary care services within the market. "Through our collaboration we are essentially building a big strong fence of doctors around our healthcare system that are hopefully going to support the hospital," stated a senior administrator.

Wayne County Government

The collaborative relationships between Wayne County government, WMHS and other county stakeholders are important to community health. Two programs supported by the county are Wayne Tomorrow and the Quality Council. Wayne Tomorrow, now 4 years old, brings a variety of stakeholders to the table to explore ways of implementing aspects of the county's comprehensive plan that is updated every 10 years. According to one county commissioner, it is a way of "bringing in people with different viewpoints, and looking at areas of strength and weakness." A sub-committee of Wayne Tomorrow, a task force called, Quality of Life, adopts a more macro perspective on social and community problems.

The Quality Council, which meets quarterly, brings together representatives from organizations

[45] A majority of members of the FQHC board (at least 51 percent) must be individuals ("consumers" or "patients") who are served by the health center. (42 C.F.R. 51c.304(b)(1)), 42 C.F.R. 56.304(b)(1)).

throughout the county to discuss both individual program activities and to brainstorm collective ways of responding to common problems. The meetings are structured with a formal agenda and are facilitated by the county commissioners' office. An example of an issue taken up by the council is kindergarten readiness. In this instance the county partners with the three school districts within the county to improve conditions. In addition to this specific example, the county participates in numerous health and social service programs directed at specific issues and populations. The positive relationship between the county government and WMHS may be traced to the fact that Wayne County government is not politically divided. These low fences between political parties have helped organizations, like WMHS, with funding and collaboration opportunities.

Community Collaboration

WMHS, CHC, the Wayne County government, and other community health and social service providers have joined in various collaborations over the years to secure resources and address identified healthcare needs. There are numerous examples of these collaborative efforts. A brief summary of five of these community initiatives is provided below. The first outlines cooperative efforts to secure financial resources for WMHS in its efforts to broaden its scope of services. The second reviews the efforts to respond to behavioral health challenges experienced by the community. The third recaps ongoing efforts to recruit physicians as well as other healthcare providers to the community. The fourth documents efforts to improve care coordination through the implementation of a readmission prevention program. Finally, the last notes WMHS involvement in community promotion and prevention programming.

Financing WMHS

A common challenge for small-to-medium-sized nonprofit organizations is securing the financial resources to replace assets or invest in new services. The sources of financing are limited and there is typically concern on the part of the lender with regard to the loan risk. WMHS has received support in reducing financing costs over the years as a result of its close relationship with Wayne County. The supportive mechanism is the county's bond rating. Because of the stability of Wayne County, it has

achieved a superior rating, which allows the county to avoid paying bond insurance. On several occasions, WMHS has financed capital projects through the issuance by Wayne County Pennsylvania Hospital and Health Facilities Authority County Guaranteed Hospital Revenue Bonds (Wayne Memorial Hospital Project). The savings per project can be in the hundreds of thousands of dollars. "They live off of our bond rating," one commissioner explained. "As long as we keep our rating high, it helps them, and then it keeps the cost of the project down; it helps everybody." In addition, WMHS has also been able to rely on the support of three locally owned banks for many capital projects. And, finally WMH receives support from the WMH auxiliary. The auxiliary generates financial resources through its volunteer-run services and its fundraising efforts.

The availability of this financial support facilitates the nimbleness of WMHS. Its rapid ability to foresee and evaluate change is one of its keys to success. One such opportunity involved seeking a Level Four Trauma Center certification. Without it, ambulances responding to automobile accidents could not bring patients to WMHS, but instead had to travel to Scranton, the nearest trauma center. To achieve certification, the WMH Board approved a $35 million capital project to include the construction of the needed facilities for a trauma center including a helipad and the conversion of 54 hospital beds from semi-private to private rooms.[46] WMH moved forward with this project, confident it would secure the funding from community partners. The projected completion date is 2019.

Behavioral Health

According to community health needs assessments, behavioral health has been rated a significant issue for residents within the WMHS service area. Yet WMHS provided only minimal care for these patients, choosing instead to refer them to Marian Community Hospital (MCH) in Carbondale where they would receive more structured treatment from mental health professionals. When MCH closed in February of 2012, and Mid-Valley Hospital closed 2 years later, WMHS found itself unprepared to deal with the

[46] The WMH Auxiliary contributed almost the entire $124,000 required for the construction of the helipad completed in October, 2016.

increase in behavioral health needs in its ER department. Working with county government, WMHS moved to not only stabilize the situation but to develop sustainable solutions. Between WMHS's ER, the County's Human Service Division, and county contracted services through NHS Human Services, Inc., a strengthened 24-hour behavioral health crisis support system was implemented in Wayne County. Most importantly to ensure success, the system was designed with a certain degree of redundancy. When NHS was unable to immediately respond to a need – which happened from time to time – the county stepped up with more "feet on the ground," as it was described. The county went further and initiated a mobile crisis service whereby a crisis worker, in certain circumstances, would visit with the behavioral health patient at their home rather than the hospital. WMHS supported NHS by providing it with space and a desk in their ER. Indeed, the services above were offered through what one senior hospital administrator called a "gentleman's arrangement." "One advantage that we have with the county," he explained, is that "you can have almost a gentleman's arrangement to provide a particular service in a certain fashion, and it will work. People stick to their word." The terms of these arrangements tend to be much more fluid, less contractual, although there are formalities in place. In all of this, the county provides a safety net to the hospital if, or when, any part of this solution begins to fail.

In time, the combined forces of WMHS, NHS and county government began to see rising numbers of behavioral health needs in children, particularly those below ninth grade. They were estimated to be more than one-third of all patients. "It quickly became apparent," stated a hospital senior administrator, "that the schools were going to be left out there in the cold. They were finding themselves restraining the kids midday and not having a place to send the kids." WMHS, the county, NHS and local law enforcement met and created a solution-centered approach. The goal was to reserve the ER for only the most severe cases. With training provided by NHS and the county, schools were able to handle cases in-house, thus protecting many children from the overwhelming institutional environment of the ER, which was the standard response when Marian Community and Mid-Valley Hospital were online.

Finally, WMHS also turned to CHC to help address the deficit of behavioral health services in the community. More specifically WMHS supported CHC's behavioral health services expansion. Today, CHC staffs one psychiatrist and eight behavioral health specialists (advanced clinical specialists and licensed clinical social workers); they offer behavioral health services at two outpatient treatment facilities providing behavioral and mental health services to adults, adolescents and children. Services include: individual counseling, psychiatric evaluation and consultation, medication management, and crisis intervention.

Physician Recruitment

Like many other rural healthcare delivery systems, physician recruitment is an issue. The county attempts to highlight what is great about its community when pitching to new physicians who are contemplating joining the hospital, or to companies exploring the possibility of expanding into the county. WMHS has many initiatives that it would like to start or expand, yet it is hampered by recruitment. For example, WMHS opened a cardiology program and recruited an interventional cardiologist. Within a very short period of time, this physician's schedule filled up, which raised fears regarding coverage availability should the physician need to leave town.

For primary care physicians, and to an extent, the recruitment of specialists, a relatively effective approach is in place between WMHS and CHC. In this relationship, CHC serves in the role of employer of newly recruited physicians. WMHS underwrites resources needed to purchase the assets of a newly acquired practice, to offset the operating losses of either a primary care or specialty practice, to include guaranteeing physician income until a newly opened practice becomes established.

Although the focus tends to be on physician recruitment, dental needs are especially alarming within the community. Patients who have not seen a dentist in decades fall into what some describe as "full-mouth, four quadrant disasters." It may take 2 years to stabilize a patient's dental conditions before starting a maintenance plan with regular six-month check-ups. WMHS has supported CHC efforts to recruit dental

professionals to resolve an identified primary care need. At the present time, CHC offers a full array of dental services in two locations, provided by six dentists and reinforced by a staff of advanced practice professionals and support staff. CHC also offers preventive mobile dental services to communities with either limited or no access to dental care. A Public Health Dental Hygiene Practitioner-Community Dental Health Coordinator performs dental services including cleanings, fluoride treatments, sealants and x-rays for children and adults.

WMHS's financial support of the CHC serves two critical and interrelated purposes. CHC's growth is essential to maintain and improve healthcare access, especially primary care health services, and it strategically serves to strengthen WMHS entities while reducing the risk of increased competition within the WMHS primary service area.

Readmission Program

The passage of the Affordable Care Act in 2010 resulted in the implementation of strategies to reduce national health system operating expenses and improve service quality. One part of the strategy called for Medicare program administrators to make changes in hospital reimbursement requirements. For the first time, beginning in 2012, hospitals would be assessed financial penalties in the event the hospital exceeded a 30-day hospital readmission rate established by Medicare. In an effort to better monitor and reduce the prevalence of hospital readmissions, WMH, in partnership with several community nursing homes and Wayne County administrators, prepared and submitted a grant to the Administration on Aging to establish a readmission reduction program targeted at Wayne County residents age 60 years or older who met certain social and medical criteria. Wayne county officials concurrently invested in the training of Wayne County Area Agency on Aging care-service coordinators and social workers on readmission reduction strategies in anticipation of grant funding to sustain the program. The program itself was initially designed to include three basic steps: A pre-discharge meeting between the patient and a hospital social service provider; a patient home visit by a county representative; and follow-up services (as required)

provided by either healthcare or county service providers. The start of the program, however, was placed in jeopardy when the expected grant was not awarded. Despite the setback, WMH and county officials moved forward with the readmission reduction program. This decision was made for several reasons. First and foremost, the program had the potential to improve patient outcomes by improving the patient's transition of care. And second, the county realized the importance of the program to WMHS.

Since its inception, program participants acknowledged that the success of the program is dependent on the county representative receiving permission from the recently discharged patient to complete a home visit. The home visit enables the county representative to fully assess the patient's progress. They are able to verify whether the patient made scheduled appointments and complied with physician directions, including medication adherence. The county representative also determines whether the patient is capable of completing activities of daily living. The third step involves documenting the patient's progress; sharing information with relevant healthcare providers including first responders; and ensuring county services designed to support independent living are scheduled as needed.

The readmission reduction program to date has experienced limited success. Although cooperation between county service providers and hospital personnel has been excellent, there is a lingering reticence by community members to open their homes to county representatives. WMH staff and Wayne County staff are currently working to address this setback. Based on a shared vision of community health excellence, and bolstered by a tradition of collaboration, the two parties are considering the possibility of formally including Wayne County service providers as part of the WMH discharge planning team, thus allowing them access to patients while still in the hospital. It is hoped that involving the county providers earlier in the process, including the opportunity to meet the patient before discharge, will increase the willingness of discharged patients to allow county service providers to visit them after they return home.

Prevention and Promotion

In collaboration with community partners, WMHS, along with its clinical affiliate CHC, have committed

to preventing illness and disease and promoting community health and welfare. In some instances, WMHS serves as the lead organization within a collaborative, and in other cases, it serves simply as an engaged collaborative partner. These community collaborations have helped identify community health issues and promote information sharing on individual organization's efforts. As a result, community service providers have been able to project a unified message; avoid service duplication; and, enhance service coordination.

In terms of specific initiatives, WMHS has actively engaged with community partners on the prevention of domestic violence, sexual assault, bullying, and addiction. WMH representatives participate in a county lead anti-violence task force as well as a related county collaborative on sexual abuse. As a contribution to these causes, WMH has invested in the training of emergency room personnel on the clinical treatment of sexual assault victims. In addition, WMH has organized and provided educational programming for healthcare providers and members of law enforcement on collecting, securing and documenting evidence. This educational offering was funded by Wayne County. It is in the area of bullying that WMH has been most active in prevention through its community outreach services. WMH leads the annual community effort to offer the Rachel's Challenge program to school districts in Wayne County.[47] WMH, the school districts and community social organizations, such as the Rotary and Lions Club, jointly fund, promote and offer programming aimed at improving one's physical fitness, and preventing behavioral health issues associated with bullying and addiction. The Wayne Memorial Health Foundation, which has also been a supporter of community health, funded eight community nonprofit organizations providing a range of services ranging from equine psychotherapy to nutrition education and wellness programs.

[47] Rachel's Challenge is a nonprofit organization offering programs that provide a sustainable, evidence-based framework for positive climate and culture in schools. Fully implemented, partner schools achieve statistically significant gains in community engagement, faculty/student relationships, leadership potential, and school climate; along with reductions in bullying, alcohol, tobacco and other drug use.

Regional Collaboration

The path chosen by WMHS is one of independence. This strategic choice is important to the organization and is one that has been in place for an extended period of time. Being independent, however, does not eliminate the willingness to work as equal partners with other area health institutions, like Geisinger Health System (GHS), on projects that benefit both systems and the community. Provided below are examples of regional collaboration. The first example recounts WMHS partnership with GHS in an accountable care organization start-up. The second example reviews WMHS efforts, in partnership with GHS, to introduce specialty services to the WMHS community through telemedicine.

The Keystone Accountable Organization

In the late 2000s, well aware of healthcare trends and encouraged by its consultants, WMHS began to consider strategic options to position the system for success in a rapidly evolving environment that now champions a population health approach to service provision along with payment schemes designed to reward service quality and efficiency. Eager to provide the best quality service to its community in an affordable way as an independent health system, in 2012, WMHS's senior management proactively sought out a partner interested in the formation of an accountable care organization (ACO).[48]

Through the combined efforts of WMHS, GMC and several other regional partners, the Keystone Accountable Care Organization, LLC was formed and began operations on January 1, 2013. Keystone ACO partners include Geisinger Clinic, Evangelical Community Hospital, the Wright Center Medical Group, and Wayne Memorial Hospital.[49] Keystone ACO participating providers encompass eight separate medical groups and nine separate hospitals. Keystone ACO provides care to 52,000 members enrolled in the Medicare entitlement program throughout a 21-county service area.[50] The ACO participates within the

[48] An ACO (Accountable Care Organization) is a group of doctors, hospitals and other healthcare providers who agree to work together to improve health services and care. The ACO supports healthcare providers by making sure they have the most up-to-date information about each member's healthcare and services. In addition, the ACO can provide healthcare providers increased access to the expertise, staff, and technology needed to make sure care is coordinated across all the places of service. This is important to provide the right care at the right time in the right setting.
[49] Keystone ACO ownership - Geisinger 75%; Evangelical 10%; Wright Center 10%; and Wayne 5%.
[50] Keystone ACO medical groups - Brookpark Family Practice, PC; Evangelical Medical Services Organization; Geisinger Clinic;

CMS ACO initiative as a Track 1 Shared Savings ACO, which means it has accepted only upside with no downside risk in exchange for a smaller maximum shared savings rate. The organization is governed by a Board of Managers made up of the ACO participants, primary and specialty physicians, and a Medicare beneficiary. The Board of Managers has fiduciary responsibility for the company.

In its short history the ACO has successfully reduced healthcare expenditures relative to healthcare costs that would have been experienced by members participating in a traditional Medicare program. Unfortunately, these savings have not met the required benchmark for shared savings between the providers and CMS. The ACO has demonstrated strong improvement in quality in both care process and outcomes over a relatively short timespan.

The WMHS community Medicare beneficiaries have shared in the benefits generated by Keystone ACO efforts. In key utilization and cost measures, WMHS services and affiliated services have generally mirrored overall ACO results with some exceptions outpacing overall ACO results in the area of inpatient admissions and readmissions, as well as inpatient and outpatient PMPM (per member per month) costs but lagging behind in emergency visit and specialist visit utilization (See Exhibit B-9 Practice Site Memorandum 03/18/2015).

The success of Keystone ACO may be attributed to several causes. These include knowledge sharing among participating organizations; the development and standardization of clinical protocols used across provider organizations; support for the medical home model of primary care; the effective use of electronic clinical information systems; and the deployment of case managers throughout the participating health organizations. Noteworthy among these is knowledge sharing among participating providers. The flow of information and knowledge across organizations has benefited WMHS entities

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Geisinger Family Health Associates; Spirit Physician Services; Wayne Community Health Center; The Wright Center Medical Group, PC; and Highland Physicians, Ltd. Keystone ACO hospitals include - Wayne Memorial; Evangelical Hospital; Holy Spirit Hospital; Geisinger -Lewistown Hospital; Geisinger- Bloomsburg Hospital; Geisinger - Shamokin Campus; Geisinger Medical Center; Geisinger Wyoming Valley Medical Center; and Geisinger Community Medical Center.

and affiliated entities in their ongoing efforts to improve health outcomes.

The work of the ACO, within the WMHS service area, is furthered by two case managers who are exclusively assigned to the WMHS service area. These nurses are located within WMS CHC sites. They monitor and support the care of especially vulnerable Medicare beneficiaries within the service area through the effective utilization of several electronic health information applications. These include the WHMS electronic medical record system, a separate case management information system, and a Keystone Health Information Exchange (KeyHIE) information system, which monitors admissions, discharges, and transfers of patients using ACO participating provider facilities.[51] These case managers are apprised of those in need either through a transition of care (TOC) event forwarded through the KeyHIE system or by provider referral. The case managers develop a care plan by carefully reviewing the patient's medical record and inform relevant providers via the case management software application. The case managers are supported in their efforts by the leadership and staff of the WMS CHC, whose actions are informed by a belief in a patient centered (medical home) approach to care.

The implementation of the ACO model has positively impacted community health in Wayne County and adjoining areas. Participants are optimistic that improvement will continue. An addition to the program is currently being integrated into the overall offering. This addition will help broaden the evaluation and care processes by introducing an assessment of social determinants of health.

Telemedicine Services

WMHS has acted decisively to provide both the scope and availability of specialty care required by thr community – a challenge experienced by many rural healthcare institutions. Always vigilant of their

[51] Keystone Health Information Exchange (KeyHIE) is a national leader in health information technology, revolutionizing the coordination of care between providers, health plans and patients. Founded in 2005, KeyHIE serves over 4 million patients over a 53 county presence in Pennsylvania. Because an HIE's success rides on interoperability, the exchange has formed partnerships with hundreds of providers, and offers patient-consented access to over 10 million electronic health records through a single online login.

independence, WMHS selected a telemedicine strategy to alleviate the community-identified problem. This strategy was based in the belief that well-conceived and targeted use of telemedicine services would serve to alleviate time and distance barriers experienced by patients seeking specialty care. Since selecting this path, WMH has actively pursued partnerships to enhance its neurological, neonatal, and critical care capabilities. Not surprisingly, it turned first to the GHS as a partner. With Geisinger's support, the WMH developed a DNV Primary Stroke Center.

WMH sought out other telemedicine applications for the hospital. With several existing program relationships with the Lehigh Valley Health Network (LVHN), WMH entered into discussions with LVHN about telemedicine neonatology services. This led to an agreement with the LVHN for telemedicine neonatology services; it was believed that this addition would serve to promote and enhance the hospital's existing birthing center services.

At this time WMH is exploring the feasibility of a telemedicine critical consult service to strengthen its existing intensive care services. The nursing director envisions a service model that is positioned between WMH's current service delivery capability and that of an electronic intensive care unit (eICU).[52]

Discussion: Community Health Outcomes and Impacts

Based on a review of collaborative activities between WMHS and Wayne County government, and between WMHS and GHS, progress was made in meeting the healthcare needs of the WMHS service area. A conclusive assessment of the partnership's success, however, requires an examination of achievement of four separate but related goals: First, did these partnerships result in increased rural community healthcare capacity and positive changes in the community's health status? Second, were investments made to increase healthcare capacity based on a documented community need? Third, are new methods of healthcare delivery in line with recommended rural health practices? And fourth, did

[52] An Electronic Intensive Care Unit (eICU) is a form of telemedicine that uses state of the art technology to provide an additional layer of critical care service. Two-way cameras, video monitors, microphones and smart alarms connected by high speed data lines provide eICU caregivers, who are called intensivists, with real-time patient data around the clock. Intensivists can also communicate with on-site caregivers through dedicated telephone lines on a continual 24-hour per day basis.

these partnerships improve quality, service efficiency, and accessibility?

Goal #1

Wayne Memorial Health System purposely chose a different path toward sustainability. Today, WMHS remains independent and viable by relying on strategic partnerships with both community and regional partners. To reach its current position, WMHS accessed ample financial resources to grow the health system. WMHS, with its partners, efficiently and effectively addressed the primary healthcare challenges of the community including behavioral health and physician recruitment. Additionally WMHS expanded capacity through the introduction of telemedicine services. Of note, a key achievement was the community's immediate response to the need for behavioral health services that was heightened by the closure of adjacent community hospital services. Recognizing the serious nature of the closure, Wayne County and WMH initially responded with a solution to address behavioral health crisis incidents. With the support of local school districts, this first effort at crisis intervention was strengthened. An initiative was implemented within the school setting to resolve or refer behavioral health issues of children and youth before the issues escalated into crisis. Concurrently, WMH, in collaboration with CHC, purposely increased the behavioral health services capacity of CHC. As significant, WMHS, in partnership with CHC, actively engaged in stabilizing and increasing primary care services (medical and dental). This was accomplished through practice acquisition as well as provider recruitment into CHC. The scope of WMH services was enhanced by the joint recruiting efforts of WMH and CHC for primary care physicians as well as specialty trained physicians.

Although there is clear evidence of increased community capacity, as has been the experience in other cases, there is no documented direct evidence of improved community health status. But there are reasons to be optimistic about the ability of the varying partnerships to improve health outcomes for identified groups of patients as well as positively impact overall community health. This belief is based on two separate but related observations. First, WMHS actions have been directed at improving the health status

of an identified population within the service area. WMHS's successful establishment, positioning and expansion of an FQHC clearly addressed the healthcare access needs of the community, especially those most disadvantaged. Second, WMHS has addressed key determinants of community health. These include social determinants. WMHS's leadership decisions and actions have always been based on a holistic view of health, one that includes social, mental, physical and spiritual components. WMHS efforts to address social ills (domestic violence, sexual assault, bullying, and addiction), alongside members of the county's health improvement partnership, demonstrate this commitment. Related to this community initiative, WMHS effort to partner in a population health enterprise (ACO) with the Geisinger Health System demonstrates its willingness to assume greater accountability in a proactive manner over time for overall community health.

Goal #2

Based on the 2016 needs assessment, identified areas of need common to all communities served by WMHS in order of priority include: behavioral health and substance abuse; primary care services; specialty care services; and care coordination for chronic conditions. As summarized in Goal #1, each of these priorities is being addressed. With regard to care coordination for chronic conditions, ongoing efforts are being pursued by the Keystone ACO.

Goal #3

WMHS has employed several strategies in line with recommended rural health practices. WMHS leadership in community collaboration reflects recommended practice.[53] Efforts at population health management through partnership in the Keystone ACO align with current thinking on effective care management.[54] The offering of telemedicine services is both a new method of healthcare delivery and a

[53] Guyot, M. (2015). *A Rural Hospital Guide to Improving Care Management.* Duluth MN. National Rural Health Resource Center.
[54] Goodspeed, S. W. (2015). *A Guide for Rural Hospitals to Identify Populations and Shift to Population Health.* Duluth MN. National Rural Health Resource Center.

rural best practice.[55] Further, the creation and continued development of an FQHC (CHC) is today a model way to organize and fund healthcare services in rural communities; it is a healthcare vehicle that enables economically challenged communities a way to efficiently provide its most vulnerable citizens the healthcare they need and can afford.[56]

Goal #4

WMH routinely maintained a high level of patient service quality and clinical quality. Efforts to improve quality and related system efficiencies was further advanced by the joint effort of Wayne County and WMH through the hospital readmission reduction project, and the partnership between WMH and GHS to pioneer a new approach to population health management through the Keystone ACO. With regard to improved accessibility, the ongoing expansion of CHC services increases opportunities to receive timely care for those in the least favorable position to afford healthcare services.

Closing Remarks & Lessons Learned

The community and regional collaborations have been deemed a success on many levels. Interviews with senior administrators and board representatives point to a common core of strengths that, when taken together, underline the successful outcomes inherent in these partnerships. These include: a shared mission to improve the community's quality of life; support by all stakeholders in a collaborative approach to achieving the mission; competent strategic leadership within WMHS management and governance structures; and in-depth operational knowledge of health and social service public programming that have allowed the various partnerships to exploit these programs for community benefit.

[55] "Telehealth Use in Rural Healthcare." Rural Health Information Hub. Retrieved from https://www.ruralhealthinfo.org/topics/telehealth March, 2017.
[56] "Federally Qualified Health Centers (FQHCs) Resources." Rural Health Information Hub. Retrieved from https://www.ruralhealthinfo.org/topics/federally-qualified-health-centers/resources March 2017.

Appendix A: The Community Served

Exhibit A-1 Population Density

The table presents population density by municipalities within WMHS primary service area. The values represent the distance in standard deviation (77 per square mile) from the Rural Pennsylvania Mean Population Density per Square Mile (110 per square mile). The table shows municipalities with varying population densities. With exception of the Carbondale community within Lackawanna County, the WMHS communities are less dense, based on geographic location. The municipalities further to the west and north are below the state mean density for rural communities.

Description*	Density per Sq. Mile	Square Miles	Population	Z Score Based on Mean Rural Pa. Density
Wayne North	26	428	11,141	-1.05
Carbondale (Susquehanna)	38	66	2,548	-0.93
Carbondale (Lackawanna)	338	74	24,915	3.43
Wayne Central	91	263	23,986	-0.19
Wayne South	127	141	17,855	0.40
Pike West	74	270	19,880	-0.50
Pike East	127	234	29,604	0.41
Pike South	213	49	10,461	1.43

*The researchers combined the municipalities in the Wayne Memorial Health System service area into seven categories as follows: *Wayne North*: Susquehanna, Starrucca, Starlight, Preston Park, Lake Como, Lakewood, Equinunk, Pleasant Mount, and Damascus. *Carbondale Area*: Herrick Center (Susquehanna County), Union Dale (Susquehanna County), Lenoxville (Susquehanna County), Carbondale (Lackawanna County), and Jermyn (Lackawanna County). *Wayne Central*: Waymart, Prompton, Honesdale, Tyler Hill, Milanville, and Beach Lake. *Wayne South*: Lake Ariel, Hamlin, Lakeville, Sterling, Newfoundland, and South Sterling. *Pike West:* Lackawaxen, Greeley, Tafton, Hawley, and Greentown. *Pike East*: Shohola, Milford, Dingmans Ferry, Millrift, and Matamoras. *Pike South*: Tamiment and Bushkill. Source: U. S. Census Bureau (2014 American Community Survey) (Population data).

Exhibit A-3 WMHS Business and Industry Employment Profile

Description:	Wayne N.	Carbondale	Wayne C.	Wayne S.	Pike W.	Pike E.	Pike S.	WMHS	PA.
Civilian employed population 16 years and over	5,822	10,035	9,080	7,482	7,730	13,041	4,030	57,220	5,946,480
Agriculture, forestry, fishing and hunting, and mining	4.84%	1.83%	2.35%	0.84%	1.88%	1.13%	0.97%	1.88%	1.40%
Construction	10.58%	7.26%	10.48%	8.29%	10.53%	7.45%	4.34%	8.52%	5.70%
Manufacturing	9.33%	15.09%	6.93%	8.43%	5.72%	7.35%	3.90%	8.52%	12.20%
Wholesale trade	2.01%	2.46%	2.73%	1.92%	1.37%	2.22%	2.41%	2.18%	2.80%
Retail trade	12.47%	11.89%	16.49%	14.21%	13.87%	13.49%	13.82%	13.75%	11.80%
Transportation and warehousing, and utilities	4.84%	3.94%	5.01%	6.83%	5.21%	6.36%	4.94%	5.37%	5.10%
Information	1.41%	1.17%	1.27%	1.47%	2.55%	1.10%	1.12%	1.42%	1.70%
Finance and insurance, and real estate and rental	5.67%	5.42%	4.38%	6.26%	6.03%	7.65%	7.82%	6.15%	6.40%
Professional, scientific, and management, and	8.33%	5.76%	7.13%	9.84%	8.46%	9.79%	9.23%	8.30%	9.80%
Educational services, and health care and social	25.28%	24.32%	24.17%	22.15%	18.58%	22.83%	25.19%	23.06%	26.00%
Arts, entertainment, and recreation, and accommodation	7.56%	8.03%	8.74%	8.25%	14.00%	10.51%	17.32%	10.15%	8.30%
Other services, except public administration	4.05%	5.23%	5.08%	4.66%	6.52%	5.47%	5.93%	5.29%	4.70%
Public administration	3.62%	7.59%	5.24%	6.86%	5.29%	4.67%	3.03%	5.42%	4.10%

Percentages represent civilian employed population 16 years and older residing within primary service area.
Source: U. S. Census Bureau (2014 American Community Survey).

Exhibit A-2 WMHS Service Area Socio-Economic Data

Description	Description	Wayne N.	Carbondale	Wayne C.	Wayne S.	Pike W.	Pike E.	Pike S.	WMHS	PA.
	Total Population	13,648	22,809	24025	17,724	19305	29,066	10,731	137,308	12758729
Gender:	Male	0.50	49.32%	54.69%	49.84%	51.32%	50.37%	45.27%	50.63%	48.80%
	Female	0.50	50.68%	43.52%	50.16%	48.68%	49.63%	54.73%	49.06%	51.20%
Age:	Median	47.82	44.48	43.20	46.85	50.76	43.43	41.95	45.36	40.40%
	18 years and under	19.44%	20.69%	18.23%	18.59%	16.31%	23.07%	24.85%	20.08%	21.50%
	65 years and over	21.11%	20.00%	16.82%	21.82%	26.30%	15.85%	12.74%	19.23%	16%
Race/Ethnicity	White	97.25%	97.42%	90.34%	96.07%	91.68%	93.21%	75.37%	92.57%	81.90%
	All Others	2.75%	2.58%	7.96%	3.93%	8.32%	6.79%	24.63%	7.13%	18.10%
Education	Less than High School	11.54%	11.22%	14.19%	9.42%	8.50%	9.67%	12.57%	10.93%	11%
	High School	41.43%	45.71%	42.31%	40.90%	39.59%	35.31%	33.95%	40.09%	36.80%
	Above High School	47.07%	43.21%	41.78%	49.69%	51.99%	55.04%	53.48%	48.72%	52.20%
Personal Income	Mean Household Income	$59,925	$56,477	$55,874	$65,381	$67,509	$75,059	$73,466	$64,676	$72,210
	Per Capita Income	$25,417	$24,250	$20,642	$25,871	$28,608	$28,342	$25,222	$25,499	$28,912
Unemployment	Unemployment Rate	6.03%	6.08%	7.67%	4.78%	4.79%	8.91%	0	6.13%	5.40%
Health Insurance	Public Health Insurance	37.86%	39.72%	46.66%	35.86%	42.27%	29.48%	39.05%	38.39%	31.90%
	No Health Insurance	12.68%	9.48%	13.08%	10.99%	10.23%	10.69%	10.11%	11.03%	9.50%
Poverty Status	Family	12.12%	10.87%	10.82%	5.51%	6.49%	7.29%	10.47%	8.89%	9.30%
	Individuals	13.45%	14.94%	15.41%	9.32%	9.27%	8.80%	14.61%	12.03%	13.50%

Source: U. S. Census Bureau (2014 American Community Survey).

Appendix B: Community Health Status, Needs, and Resources

Exhibit B-1 Health Behavior Data

Description	Pike County (2015)	Pennsylvania (2015)	Pike County (2014)	Pennsylvania (2014)	Pike County (2013)	Pennsylvania (2013)	Pike County (2012)	Pennsylvania (2012)	Pike County (2011)	Pennsylvania (2011)
Adult Smoking	20%	20%	20%	20%	20%	21%	18%	21%	19%	22%
Adult Obesity	29%	29%	31%	29%	31%	29%	31%	29%	31%	28%
Physical Inactivity	22%	24%	27%	26%	25%	26%	25%	26%	25%	N/A
Excessive Drinking	15%	17%	15%	17%	14%	17%	11%	18%	10%	18%
STD (per 100,000)	77	431	102	415	89	374	81	346	62	340
Teen Births (per 1000)	14	28	14	29	13	29	13	31	13	31

Description	Wayne County (2015)	Pennsylvania (2015)	Wayne County (2014)	Pennsylvania (2014)	Wayne County (2013)	Pennsylvania (2013)	Wayne County (2012)	Pennsylvania (2012)	Wayne County (2011)	Pennsylvania (2011)
Adult Smoking	19%	20%	19%	20%	22%	21%	23%	21%	24%	22%
Adult Obesity	30%	29%	29%	29%	28%	29%	28%	29%	28%	28%
Physical Inactivity	25%	24%	24%	26%	25%	26%	25%	26%	N/A	N/A
Excessive Drinking	17%	17%	18%	17%	18%	17%	15%	18%	16%	18%
STD (per100,000)	149	431	89	415	57	374	58	346	67	340
Teen Births (per1000)	27	28	18	29	18	29	19	31	20	31

Description	Lackawanna County (2015)	Pennsylvania (2015)	Lackawanna County (2014)	Pennsylvania (2014)	Lackawanna County (2013)	Pennsylvania (2013)	Lackawanna County (2012)	Pennsylvania (2012)	Lackawanna County (2011)	Pennsylvania (2011)
Adult Smoking	23%	20%	23%	20%	24%	21%	21%	21%	27%	22%
Adult Obesity	28%	29%	25%	29%	26%	29%	29%	29%	26%	28%
Physical Inactivity	27%	24%	26%	26%	30	26%	26%	26%	28%	N/A
Excessive Drinking	24%	17%	17%	17%	23%	17%	18%	18%	24%	18%
STD (per 100,000)	182	431	176	415	187	374	NA	346	NA	340
Teen Births (per 1000)	27	28	28	29	27	29	30	31	33	31

Source: Robert Wood Johnson County Health Rankings and Roadmaps.

Exhibit B-2 Morbidity Data

Description	Pike County (2015)	Pennsylvania (2015)	Pike County (2014)	Pennsylvania (2014)	Pike County (2013)	Pennsylvania (2013)	Pike County (2012)	Pennsylvania (2012)	Pike County (2011)	Pennsylvania (2011)
Poor Physical Health Days (ave. per 30 days)	3.6	3.5	3.5	3.5	3.7	3.5	3	3.5	3	3.5
Poor Mental Health Days (ave. per 30 days)	2.9	3.6	2.9	3.6	2.9	3.6	2.5	3.6	2.5	3.6
Diabetes	10%	10%	11%	10%	11%	10%	11%	10%	9%	9%
HIV Prevalence (per 100,000)	171	292	171	292	162	293	148	294	140	N/A
Drug Poisoning Deaths (per 100,000)	15	15	12	14	N/A	N/A	N/A	N/A	N/A	N/A

Description	Wayne County (2015)	Pennsylvania (2015)	Wayne County (2014)	Pennsylvania (2014)	Wayne County (2013)	Pennsylvania (2013)	Wayne County (2012)	Pennsylvania (2012)	Wayne County (2011)	Pennsylvania (2011)
Poor Physical Health Days (ave. per 30 days)	3.9	3.5	3.9	3.5	4	3.5	4.1	3.5	4.3	3.5
Poor Mental Health Days (ave. per 30 days)	4.3	3.6	4.3	3.6	4.2	3.6	4.5	3.6	4.4	3.6
Diabetes	12%	10%	11%	10%	11%	10%	11%	10%	10%	9%
HIV Prevalence (per 100,000)	150	292	150	292	159	293	188	294	182	N/A
Drug Poisoning Deaths (per 100,000)	15	15	14	14	N/A	N/A	N/A	N/A	N/A	N/A

Description	Lackawanna County (2015)	Pennsylvania (2015)	Lackawanna County (2014)	Pennsylvania (2014)	Lackawanna County (2013)	Pennsylvania (2013)	Lackawanna County (2012)	Pennsylvania (2012)	Lackawanna County (2011)	Pennsylvania (2011)
Poor Physical Health Days (ave. per 30 days)	3.6	3.5	3.6	3.5	3.6	3.5	3.5	3.5	3.8	3.5
Poor Mental Health Days (ave. per 30 days)	3.9	3.6	3.9	3.6	3.8	3.6	3.6	3.6	3.5	3.6
Diabetes	11%	10%	11%	10%	10%	10%	10%	10%	10%	9%
HIV Prevalence (per 100,000)	135	292	135	292	139	293	131	294	119	N/A
Drug Poisoning Deaths (per 100,000)	19	15	16	14	NA	N/A	N/A	N/A	N/A	N/A

Source: Robert Wood Johnson County Health Rankings and Roadmaps.

Exhibit B-3 Mortality Data

Description	Pike County (2010-12)	Pennsylvania (2010-12)	Pike County (2009-11)	Pennsylvania (2009-11)	Pike County (2008-10)	Pennsylvania (2008-10)	Pike County (2007-09)	Pennsylvania (2007-09)	Pike County (2006-08)	Pennsylvania (2006-08)
Heart	152.7	181.5	151.2	186.6	145.1	194	160.5	203.2	165.7	215.4
Cancer	135.2	176.7	129.4	180	130.7	183.8	140.9	187.6	152.2	191.6
Stroke	22.4	38.3	19.9	39.3	17.8	40.1	20.4	42.6	20.4	45.3
CLRD	29.1	38.6	20	38.9	21.2	39.9	20.2	40.6	30.5	40
Accidents	40.9	42.3	42	40.8	36.7	40.4	38.9	40.8	36.9	40.9
Alzheimer's	12.6	19.2	12.3	19.3	14.4	20.6	13.2	21.4	15.3	22.5
Diabetes	15.9	20.8	13.8	20.2	11.2	20.4	13.3	21.4	14.5	22.4
Nephritis	7.1	16.9	6.6	17.7	ND	18.6	ND	19	10.2	19.9
Influenza	10.5	14.1	9	14.7	ND	15	ND	16	ND	17.1
Septicemia	6.8	13.1	6.1	13.7	9.6	14.2	10.3	15.2	12.1	16.2
Age Adjusted Death Rate (per1000)	5.7	7.5	6.4	7.7	4.9	7.6	4.9	7.7	5.6	8.1

Description	Wayne County (2010-12)	Pennsylvania (2010-12)	Wayne County (2009-11)	Pennsylvania (2009-11)	Wayne County (2008-10)	Pennsylvania (2008-10)	Wayne County (2007-09)	Pennsylvania (2007-09)	Wayne County (2006-08)	Pennsylvania (2006-08)
Heart	230.6	181.5	222.9	186.6	230	194	229	203.2	253.1	215.4
Cancer	166.1	176.7	167.3	180	174.1	183.8	177.9	187.6	191.8	191.6
Stroke	35	38.3	35.3	39.3	37.2	40.1	39.6	42.6	40.4	45.3
CLRD	38.7	38.6	33.6	38.9	34	39.9	29.9	40.6	34.8	40
Accidents	44.6	42.3	41.1	40.8	40.2	40.4	49.6	40.8	61.4	40.9
Alzheimer's	32.3	19.2	30.8	19.3	28.8	20.6	31.6	21.4	29.8	22.5
Diabetes	26.6	20.8	22.6	20.2	20.7	20.4	20.9	21.4	19.2	22.4
Nephritis	16.1	16.9	15.5	17.7	17	18.6	20.3	19	17.1	19.9
Influenza	19.8	14.1	17.5	14.7	16	15	18.1	16	20.7	17.1
Septicemia	10.9	13.1	10.8	13.7	ND	14.2	11.5	15.2	13.1	16.2
Age Adjusted Death Rate (per1000)	8.4	7.5	7.9	7.7	7.5	7.6	7.5	7.7	8.3	8.1

Description	Lackawanna County (2010-12)	Pennsylvania (2010-12)	Lackawanna County (2009-11)	Pennsylvania (2009-11)	Lackawanna County (2008-10)	Pennsylvania (2008-10)	Lackawanna County (2007-09)	Pennsylvania (2007-09)	Lackawanna County (2006-08)	Pennsylvania (2006-08)
Heart	**236.2**	**181.5**	**239**	**186.6**	**249.1**	**194**	**252**	**203.2**	**266.2**	**215.4**
Cancer	**175.7**	**176.7**	**181.2**	**180**	**188.5**	**183.8**	**192.9**	**187.6**	**197.7**	**191.6**
Stroke	**36.5**	**38.3**	**38.7**	**39.3**	**40.6**	**40.1**	**44.1**	**42.6**	**46.9**	**45.3**
CLRD	**39.9**	**38.6**	**40.4**	**38.9**	**42.5**	**39.9**	**44.5**	**40.6**	**44.8**	**40**
Accidents	**47.6**	**42.3**	**45.4**	**40.8**	**46.4**	**40.4**	**45.6**	**40.8**	**44.4**	**40.9**
Alzheimer's	**21.5**	**19.2**	**21.7**	**19.3**	**25.2**	**20.6**	**25.2**	**21.4**	**24.6**	**22.5**
Diabetes	**26.2**	**20.8**	**25.5**	**20.2**	**24.2**	**20.4**	**27**	**21.4**	**28.2**	**22.4**
Nephritis	**20.5**	**16.9**	**21.2**	**17.7**	**20.3**	**18.6**	**22.1**	**19**	**21.6**	**19.9**
Influenza	**12.6**	**14.1**	**13.7**	**14.7**	**14.6**	**15**	**17.1**	**16**	**17.2**	**17.1**
Septicemia	**16.3**	**13.1**	**16.2**	**13.7**	**17.1**	**14.2**	**20.2**	**15.2**	**19.5**	**16.2**
Age Adjusted Death Rate (per1000)	**8.5**	**7.5**	**8.5**	**7.7**	**8.2**	**7.6**	**8.7**	**7.7**	**9.3**	**8.1**

Source: Pennsylvania Department of Health County Health Profiles.

Exhibit B-4 Health Access Risk

The table presents health access risk by municipality within the WMHS primary service area. The values represent the distance in standard deviation from the Rural Pennsylvania Mean Health Access Risk value. The table presents health access risk values (those with positive values) above the state mean value as well as health access risk values (those with negative values) below the state mean value. The average for the entire service area approximates the Rural Pennsylvania Mean Health Access Risk Value. Of consequence is the fact that the value improves in relationship to geographic location with western and northern municipalities for the most part fairing worse than those further to the east and south.

Description	Population	Health Access Risk z-of-z score
Wayne North	11,141	.290
Carbondale (Susquehanna)	2,548	-.367
Carbondale (Lackawanna)	24,915	.528
Wayne Central	23,986	.163
Wayne South	17,855	-.727
Pike West	19,880	-.276
Pike East	29,604	-.121
Pike South	10,461	-1.627

Source: U. S. Census Bureau (2014 American Community Survey) (Population data).

Exhibit B-5: Community Health Resources

Description	Pennsylvania (State Total)	Wayne County	Lackawanna County	Pike County	Susquehanna County
HOSPITALS & NURSING HOMES(11)					
General Acute Care Hospitals, 2013-14	**157**	**1**	**3**	**0**	**2**
Hospital Beds Set Up & Staffed, 2013-14	**32,525**	**104**	**676**	**0**	**46**
Beds Set Up & Staffed Per 1,000 Residents	**2.54**	**2.02**	**3.18**	**0.00**	**1.10**
# Nursing Homes, 2014	**701**	**3**	**19**	**2**	**3**
# Total Licensed/Approved Nursing Home Beds, 2014	**88,063**	**371**	**2,423**	**110**	**253**
Approved Nursing Home Beds Per 1,000 Residents, 2014	**6.89**	**7.22**	**11.39**	**1.96**	**6.04**
OFFICES OF PHYSICIANS AND DENTISTS(12)					
# Physicians Offices (NACIS 6211), 2013	**8,887**	**29**	**159**	**16**	**9**
# Physicians Offices Per 100,000 Residents, 2013	**69.5**	**56.1**	**74.4**	**28.3**	**21.3**
# Dentists Offices (NACIS 6212), 2013	**5,169**	**13**	**111**	**12**	**5**
# Dentists Offices Per 100,000 Residents, 2013	**40.4**	**25.2**	**51.9**	**21.2**	**11.8**

Sources: Pennsylvania Department of Health (Hospital and Nursing Home data).
U.S. Census Bureau County Business Patterns (Physician and Dentist data).

Exhibit B-6 Wayne Memorial Hospital Operational Data

Description	2010-11	2011-12	2012-13	2013-14	2014-15
Long Tern Care Unit	No	No	No	No	No
Licensed Beds	112	112	112	118	112
Beds Set Up and Staffed	97	97	97	104	87
Admissions	3375	3506	3630	3636	3887
Discharges	3375	3469	3587	3609	3409
Patient Days of Care	15621	16929	17481	15482	17607
Discharge Days	14821	17913	18070	16855	12953
Bed Days Available	35713	36777	36530	37960	31755
Average Length of Stay	4.39	5.16	5.04	4.67	3.8
Occupany Rate	43.7	46	47.9	40.8	55.4
Live Births	381	401	386	435	465
Inpatient Surgical Operations	847	1131	1263	2132	1133
Outpatient Surgical Operations	2440	2687	2680	5775	2485
Total Surgical Operations	3287	3818	3943	7907	3618
Medical Staff (Board Certified)	57	70	74	78	62
Medical Staff (Other)	10	2	2	10	4
Total Medical Staff	67	72	76	88	66

Source: Pennsylvania Department of Health Hospital Statistical Reports.

Exhibit B-7 Wayne Memorial Hospital Quality Data

	Patients Highly Satisfied		Recommended Care		Readmission Composite	
	WMH	PA	WMH	PA	WMH	PA
2014	68.00%	69.33%	99.28%	97.79%	NA	NA
2013	67.00%	68.50%	97.50%	98.55%	18.87%	19.49%
2012	64.25%	66.87%	96.28%	98.23%	19.33%	20.43%
2011	67.75%	65.34%	95.75%	97.67%	21.24%	21.84%
2010	66.00%	64.75%	95.99%	96.25%	NA	NA
2009	63.25%	63.34%	95.09%	95.00%	NA	NA
2008	59.00%	NA	94.13%	94.00%	NA	NA

Overall Recommended Care (This measure is a weighted average of all of the process-of-care, or "core" measures, reported on CMS Hospital Compare)
Percent of Patients Highly Satisfied (This measure is used to assess adult inpatients' perception of their hospital. Patients rate their hospital on a scale from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible. Highly satisfied 7.0-10.0)
Readmission Composite (Average Medicare hospital 30-day readmission rates for heart failure, heart attack, stroke, VTE, and pneumonia)
Source: WNTB.org (Why Not the Best)

Exhibit B- 8 Wayne Memorial Hospital Financial Data

Wayne Memorial Hospital	2010	2011	2012	2013	2014	2015
Operating Revenue	68101	70750	75367	72175	72628	79114
Operating Income	-433	-531	1668	142	739	4071
Net income	2641	6389	2306	3910	7235	5631
Operating Return	-0.64%	-0.75%	2.21%	0.20%	1.02%	5.15%
Net Return	3.88%	9.03%	3.06%	5.42%	9.96%	7.12%

Source: Pennsylvania Health Care Cost Containment Council.

B-9 Three Rivers ACO Performance (All Wayne Sites)

	Jan-Sep 2013	Jan-Sep 2014
Average Membership	1,921	1,894
Dual Population	28.6%	29.4%
Medicare Only Population	71.4%	70.6%
Aged Population	67.9%	67.3%
Disabled Population	31.6%	32.4%
ESRD Population	0.5%	0.3%
Average Risk	0.84	0.95
Admits/1000	357	343
Admits/1000 - Acute	292	290
Admits/1000 - SNF	65	53
Inpatient ACSC/1000	59	53
Total PMPM	$776	$766
Inpatient PMPM	$338	$320
Outpatient PMPM	$214	$219
Professional PMPM	$223	$227
IP Case Mix Index	1.58	1.54
Readmit Rate	13.6%	14.6%
Readmits/1000	40	42
Amb Surg Visits/1000	503	416
OP ER Visits/1000	599	620
Outpatient ER ACSC/1000	89	83
Office Visits/1000	3,511	3,090
PCP Visits/1000		
Specialist Visits/1000		
OP Radiology/1000	2,191	1,903
CT Scans/1000	231	200
MRI/1000	124	105

Case Study #3: Geisinger Shamokin Area Community Hospital: The Merger of a Community Hospital and Regional Health System

Case Summary

The Shamokin State Hospital, located in Coal Township, Northumberland County, Pennsylvania, opened its doors on January 8, 1912, with a mission to provide health services to mining communities within the region. The hospital remained as one of several acute care hospitals governed and managed by Pennsylvania until 1992. In February 1992, in an effort to remove itself from direct responsibility for inpatient acute care services, Pennsylvania conveyed the hospital to a non-profit corporation, the Lower Anthracite Community Hospital Corporation. The hospital continued operations from that date until January 2012 under the name—the Shamokin Area Community Hospital (SACH). In 2007, anticipating increasingly difficult operational and financial challenges common to rural hospitals, the Shamokin Area Community Hospital purposely began the pursuit of a strategic partnership. In 2009, Shamokin Area Community Hospital opened discussions with the Geisinger Medical Center (GMC).[57] These discussions culminated on January 1, 2012 with an agreement between the two parties for the full merger and integration of Shamokin Area Community Hospital into GMC.

Without question Shamokin Area Community Hospital's merger with the GMC ensured the continued availability of locally based health services for this Northumberland County community. In the near term, GMC has maintained the Shamokin institution as an acute care hospital through significant investment in the physical plant and human resources as well as inclusion in receipt of enhanced reimbursement rates as an asset merged entity of the research and teaching institution. The success of this alliance may be traced to several key determinants. First, SACH's Board of Directors and administration fully anticipated the seriousness of the challenges they faced and responded in a proactive way. Second, key SACH stakeholders were and remain committed to providing healthcare services located within the community. Third, SACH administrators effectively steered the partnership search and transition processes always

[57] Geisinger Medical Center is a general medical and surgical hospital in Danville, PA, with 545 beds. It is also a research and teaching hospital. Survey data for 2015 show that 42,295 patients visited the hospital's emergency room. The hospital had a total of 26,686 admissions. Its physicians performed 10,118 inpatient and 15,819 outpatient surgeries.

mindful to maintain trust, communication, and transparency among all participants. And most importantly, the selection of GMC, a partner with whom SACH had existing working relationships, a shared service area, and complementary resources and capabilities measurably contributed to the positive results. Today, in line with recommended rural healthcare practices and with a focus on those most vulnerable, Geisinger-Shamokin Area Community Hospital (G-SACH) provides services for approximately 60 percent of Northumberland County's 93,944 residents.

The Community Served

G-SACH is located in Coal Township, Northumberland County, approximately 2 miles north of the City of Shamokin. From its location in southwest Northumberland County, G-SACH provides health services to communities in a 200-square-mile area located throughout the central and southern parts of the county. The geography, history and current social and economic conditions of the service area in many ways are consistent with those of other Pennsylvania northern tier rural communities. The region, characterized by a series of valleys and ridges, is steeped with historical significance dating back to the country's founding. Over the last 200 years, the area has experienced economic booms and busts inextricably linked to the exploitation of the region's natural resources. At the current time, the density of the primarily white population is significantly greater than rural Pennsylvania communities, on average. The population tends to cluster in small towns characteristic of other mining regions. The overall population of the service area is on the decline.[58] The average age of service area residents is above the mean for Pennsylvania residents. The educational level and mean household income are well below Pennsylvania averages (See Appendix A).

Community Health Status, Needs and Resources

The health status of G-SACH's service area remains measurably below the average health status of all Pennsylvania residents to include, in many instances, those Pennsylvanians residing in other rural

[58] Percentage decline in Northumberland County, Pa., population from prior U.S. Decennial Censuses: 1990 (-3.6%); 2000 (-2.3%); 2010 (0%); est 2015 (-1.4%).

communities. This finding is supported by publicly available health behavior, morbidity and mortality data (See Exhibits B-1, B-2, B-3). The "health access risk value" for five of the nine communities served by G-SACH are greater than the average value for all Pennsylvania rural communities. The communities with higher than average values include the four largest ZIP codes served by G-SACH – Shamokin, Sunbury, Mount Carmel, and Coal Township. The above average values signify that the healthcare needs of these communities exceed the average needs of rural communities in Pennsylvania and the economic resources available to access care by community members are less than those available within the average Pennsylvania rural community (See Exhibit B-4). Identified healthcare concerns for the community that require additional resources include: behavioral health and substance abuse; access to and affordability of healthcare; health awareness and health literacy; and, health-related lifestyle behaviors. At the time of the merger, however, the availability of healthcare resources within Northumberland County were well below state averages. The primary source of care within the southwest portion of the county was the Shamokin Area Community Hospital – an institution at the time finding it increasingly difficult to independently sustain operations (See Exhibits B-8, B-9, B-10).

Factors Leading to Partnership

"The handwriting was on the wall"; this particular statement was repeated a few times by multiple people interviewed for this case study. The context of this statement was simple—the SACH Board knew, years in advance, that it was facing a diminished future, a future threatened by a compilation of social and economic challenges and industry specific mandates. The Board had to make a very important decision. Financially, SACH was generating positive operating margins as the hospital entered the 2000s. Average annual operating income in the first years of the new century was between $1 million and $2 million (See Exhibit B-10). Yet, based upon financial projections completed by consultants, they were not in a position to sustain this profitability moving forward. It was anticipated that SACH had approximately a 5-year window before the organization would experience serious financial stress.

A number of factors influencing SACH's projected operational and financial decline were common to all

acute care hospitals. Several other factors were associated more with the rural hospital experience. Factors affecting all acute care hospitals included: declining reimbursements in real terms; increasing federal regulatory requirements; the related need for significant investment in information technology resources; and, an increasing growth in outpatient services coupled with shrinking inpatient volumes and associated revenue streams. Rural community hospitals faced the additional challenges of recruiting healthcare professionals to remote communities to serve populations with above national average healthcare needs and lower than national average economic resources.

SACH was not immune to any of the factors summarized above. Given the demographics described above, SACH is located within a community with social and economic challenges (See Appendix A). The population is in decline: residents are aging and in greater need of care. The community is further challenged by a limited economic opportunity structure, one that has been shrinking for many years. For a small rural hospital, these community conditions increase the difficulties of recruiting well trained and motivated physicians to the area. While SACH had a relatively stable medical staff, many of its members were nearing retirement and there was no replacement or succession plan in place. Many were single physician practices.

The Board considered employing physicians as a way to entice them to the area, thus guaranteeing them a stable and predictable salary regardless of patient volume. The Board did not follow through on the recommendation for two reasons. First, SACH did not have the required management capabilities at the time to implement the recommendation. Second, SACH's financial resources were not robust enough to afford the initial investment and ensuing operating losses associated with a medical group start-up, and, at the same time, fund other critical strategic projects. And, without question there were other critical projects requiring immediate attention. As an example, SACH had to respond to the information technology challenges brought on by a mandatory Federal initiative requiring the use of certified electronic health record technology (EHR) to: improve quality, safety, efficiency, and reduce health

disparities. SACH's existing system did not meet the requirements. A new information technology system would be a multimillion-dollar investment, one that would need to happen within 3 to 5 years.

Challenges associated with physician recruitment stymied SACH's ability in the near term to either expand its scope of services or increase the volume of existing services. Opportunities to increase reimbursement for its existing level of services were also extremely limited. One of the most troublesome factors affecting SACH had to do with the payer mix dynamic. An overwhelming percentage of care, some 70 to 80 percent, was Medicare and Medicaid. SACH was experiencing very small, if any, increase in reimbursement from Medicare or Medicaid.

Commercial insurers such as Blue Cross and Highmark constituted the remaining sources of reimbursement. Efforts to independently negotiate more favorable rates with these insurers were not successful. At one point SACH lead an effort to form a joint hospital bargaining group comprised of itself and hospitals in Bloomsburg and Sunbury, Pennsylvania. Some on the Board were led to believe that joining forces would give SACH some leverage with insurance companies regarding reimbursement rates and other financial considerations. Such a plan was rejected after analyzing the costs and associated benefits of an initiative of this nature.

Through the strategic planning process, the SACH Board came to terms with the myriad of challenges facing the hospital, and began to take steps to secure an uncertain future through strategic partnerships. "We began talking to different consultants," one Board member reflected. "Give us your input. Give us your take," they asked the consultant. "How do we go about this?" The Board was most interested in keeping the hospital open and saving jobs. "The inevitable was going to come," a Board member remembered. "Let's not wait until…we are borrowing a ton of money and knowing darn well…we are not going to be able to pay it back." SACH needed a partner.

The decision to act did not come too early. Although SACH's service quality continued to meet or exceed the performance of other Pennsylvania healthcare institutions (see Exhibit B- 9), SACH experienced significant declines in admissions, patient days of care, and inpatient surgical procedures from 2007 forward (See Exhibit B-8). The unfavorable trending in operational activities immediately and negatively impacted financial performance (See Exhibit B-10). It is important to note that SACH was not the only healthcare institution to experience a drop off in services during this time period. The economic downturn beginning in 2007 contributed to slow-downs across the healthcare industry. The combination of the economic downturn and industry specific factors, however, resulted in SACH's operational and financial downturn progressing more rapidly than anticipated.

The Partnership Search and Selection Process

In 2008, as a first step in the process of finding a possible suitor, SACH secured the assistance of one of the healthcare consulting firms it initially contacted during the strategic planning process, Kaufman Hall & Associates. "The healthcare industry is rapidly evolving," they state on their website, "and organizations across all sectors are contemplating acquisitions and partnerships as a means of enhancing their capabilities, gaining scale, and strengthening their competitive position."[59] SACH looked to Kaufman Hall & Associates to help them develop their partnership strategy and rationale, identify the best-fit partner, determine the optimal transaction process, develop a targeted structure, and execute the transaction to ensure goals were met.

In early conversations with Kaufman Hall, SACH wanted to explore all available options. With each potential partnering organization, SACH initially explored the possibility of an affiliation before entertaining a merger/acquisition approach. If possible, SACH wanted to retain its independence and local control; more specifically, it wanted an arrangement where it could still maintain fiduciary responsibility. Over time, as the search process evolved, it became more apparent that SACH would realize the greatest benefit through a merger or possibly acquisition. It was thought that an affiliation would buy SACH only

[59](http://www.kaufmanhall.com/management-consulting/healthcare/mergers-acquisitions-and-partnerships; March 28, 2016)

5 to 7 more years. Yet it took some time to come to this conclusion.

In its search process, SACH began meeting with representatives from the Penn-State Hershey Medical System, Evangelical Hospital, Susquehanna Health, and beginning in 2009, with the Geisinger Medical Center. After some consideration, Susquehanna Health was thought to be too far out of the SACH service area to have any meaningful relationship. Evangelical representatives, as one senior administrator remembered, painted a picture of a future unaffected by the large changes and looming challenges that the SACH Board was preparing to overcome. This gave the Board some reason for concern. How could they partner with an institution that saw little benefit in joining forces? Hershey, on the other hand, was simply not interested in partnering with SACH, which surprised some SACH Board members; they thought that Hershey, as one senior administrator put it, "would jump at the chance to be in Geisinger's backyard. And maybe in hindsight, they're regretting they didn't."

The SACH board even explored a for-profit scenario, a position favored by many of the medical staff. They believed that a for-profit structure would allow it to remain an independent operator within a larger system, an effort in "self-preservation," as one Board member reflected. The mission of SACH, and particularly an opinion held among many of the local physicians, is that care should be affordable to people in the community. This aspect of SACH's mission did not align well with the for-profit model. Further, according to many of the SACH Board, the experiences of another Northumberland County hospital, Sunbury Hospital, were not positive after its acquisition by a for-profit system, Community Health Systems (CHS). This assessment ultimately dissuaded the Board from considering the for-profit option a viable alternative.

In the end, Kaufman Hall recommended that SACH exclusively engage in partnership discussions with the Geisinger Medical Center (GMC). There were numerous reasons for this recommendation. Among the reasons cited were GMC's reputation, size, scope of services, proximity, existing relationships with

SACH and superior technical and financial resources.

The GMC, located in Danville, Pa., was a mere 17 miles from the SACH, a commute of 25 minutes door-to-door. As one of the largest health service organizations in the U.S., the GMC provides care to over 3 million people living within 45 Pennsylvania counties and a portion of southern New Jersey. As noted on its website, "The physician-led system is comprised of approximately 30,000 employees, including nearly 1,600 employed physicians, 12 hospital campuses, two research centers and a 510,000-member health plan, all of which leverage an estimated $8.9 billion positive impact on the Pennsylvania economy."[60] By Pennsylvania's healthcare standards, GMC is second in size only to the University of Pittsburgh Medical Center (UPMC).

The GMC market extended well into SACH's service area. Indeed, as one senior administrator put it, Geisinger had "more market share in our market than we did." It was a relationship that benefited both the Shamokin community and Geisinger. And by the time SACH began looking for a partner, the relationship with Geisinger was well established. SACH worked with Geisinger's office of aging; they used Geisinger's radiology department, lab, pathology and other clinical services. Geisinger also provided much needed dermatology services. The SACH also worked collaboratively with Geisinger on general surgery, orthopedics, gastrointestinal and urology services and women's health. Patients in need of critical or tertiary care were often transported to GMC in Danville from SACH.

GMC's health information system and contracted rates of reimbursement provided additional incentive to pursue some form of partnership arrangement. With regard to health information technology, SACH realized the partnership could possibly eliminate a $1 million to $2 million investment by SACH in a new hospital-wide health information system. The existing GMC system could be extended to SACH along with the critical technical support needed to adapt and maintain the technology within SACH. Further,

[60] (http://www.geisinger.org/pages/about-geisinger/index.html; Accessed on March 28th, 2016).

since SACH was less than 35 miles away from GMC, under a Provider Base designation within Medicare, SACH could—if it fully merged/integrated into GMC—use GMC's license, charge master and provider numbers for reimbursement. Given GMC's rates as a research and teaching institution,[61] SACH could potentially receive up to $2,000 more per inpatient discharge than what it was receiving at the time.

Similar to discussions with other potential partners, SACH initially explored affiliation options with GMC that would allow SACH to retain its independence. Although various affiliation options would benefit both parties, the maximum benefit could only be realized through merger. With 80 percent of SACH's revenue based on declining government payments, finding a way to change the financial dynamic was necessary to sustain operations. Being under the umbrella of GMC's license and provider numbers offered the best way to change this dynamic.

Throughout the negotiation process, SACH's senior management staff effectively communicated with key SACH constituents, including the Board of Directors and medical staff. The reasons for seeking the partnership and the anticipated impacts on the existing medical staff were clearly stated. The management team had credibility with the Board. "They knew if we told them something, that we weren't…pulling their leg," remembered one senior administrator. "There was some integrity that we brought to it." Both management and board members remained sensitive to the needs of the medical staff throughout the process. The two physicians on the Board were well respected. Other Board members often deferred to them, asking for their thoughts and opinions. This trust helped ease the conversations between parties and foster agreement especially when SACH faced obstacles in the negotiation process.

[61] All services provided by a hospital, except physician services, must be furnished by the hospital directly or through arrangements with another in order to receive Medicare payment under the Prospective Payment system (PPS). Each hospital knows its payment rate prior to the beginning of its fiscal year. To arrive at a basic price for a given service for a particular patient, each Medicare patient discharged by a PPS hospital is first assigned to a DRG that has a corresponding DRG weight. The DRG weight is multiplied by the hospital's payment rate per case. The DRG basic payments are adjusted to take into consideration four additional factors which are considered to reflect more accurately the costs of services provided by hospitals. These include application of a wage index; indirect medical education costs; cost outliers; and disproportionate share payments. GMC Medicare rate increases above the base DRG rates result from the inclusion of indirect medical education costs in rate calculations. More specifically, teaching institutions are assumed to have higher costs than other institutions due to extra tests and procedures performed for teaching purposes and the treatment of more serious cases. Accordingly, the DRG payments for these hospitals are increased by a percentage based on the ratio of interns and residents to hospital beds.

And as GMC and SACH completed the due diligence process facilitated by Kaufman Hall, a notable obstacle involving the SACH medical staff arose. SACH medical staff support for a partnership with GMC was predicated on the ability of the SACH medical staff to maintain each member's status as an independent practicing physician. As a physician lead health system, GMC at the time limited practicing privileges at GMC facilities to a closed panel of employed GMC physicians. As a result of SACH's management and board advocacy for its medical staff and GMC's desire for partnership, a GMC initiated solution was found to resolve this dilemma. Toward this end, GMC changed its bylaws to allow the existence of independent, non-employed physicians to practice at GMC.

With the completion of the due diligence process, the two parties entered into an agreement for the full merger and integration of Shamokin Area Community Hospital into Geisinger Medical Center. Effective January 1, 2012, the 70-bed hospital located in Coal Township, Northumberland County began operations as the Geisinger Shamokin Area Community Hospital (G-SACH) – a campus of the Geisinger Medical Center. As a provision of the agreement, GMC guaranteed that the G-SACH would maintain its designation as an acute care hospital for 2 years. After 2 years, determination of its status by GMC would be based on "financial sustainability."[62]

The Partnership Formation Process

SACH's governing and management structures and processes required significant change to ensure successful merger implementation. As a result of the merger, SACH's Board of Directors relinquished fiduciary responsibilities for the hospital and now serves in an advisory role to GMC's President and CEO. SACH employees who elected to stay after the merger retained their positions now as employees of GMC. The roles and responsibilities of a great number of senior and middle management personnel, however, changed. For example, prior to the merger, SACH's senior management structure mirrored a traditional small hospital design with senior managers representing finance, human resources, and patient

[62] A decision by GMC senior management and board on the future status of GSACH is based on an annual review of the acute care hospital's operational and financial performance.

services reporting to the President/CEO and the President/CEO reporting to the Board of Directors (See Exhibit B-7). After the merger, the G-SACH chief administrative officer (formerly the President/CEO of SACH position) reports to GMC's chief administrative officer. Clinical and Administrative heads at G-SACH now report to the GMC senior administrator for each of their functional areas and maintain indirect relationships with the chief administrative officer G-SACH (See Exhibit B-11).

GMC's administrative and clinical policy and procedures were introduced and implemented throughout G-SACH. Most importantly, G-SACH adopted GMC's charge master and provider numbers. G-SACH as a campus of GMC now bills and is being reimbursed at rates superior to those received prior to the merger.

Significant organizational change of this nature ripples through an organization, among its key external stakeholders, and throughout the community at large. In SACH's case these changes resulted in concern, anxiety and in some instances upset in the period immediately following the merger. Within the organization, the Board of Directors and hospital employees were pleased by the decision to continue the employment of those currently working at the hospital. As newly hired GMC staff, those who continued at the Shamokin hospital enjoyed a one-time boost to their benefits, and in some cases, their compensation. But, changes to the organizational structure did create worry at several levels. These concerns centered on a growing sense of a change in organizational culture related to a perceived loss of strategic and operational autonomy and control. The organizational and procedural structures now under GMC have, for some, altered the process. Now as a component of a larger organization, both the strategic and operational decision-making process dramatically slowed and increased in complexity.

Representing a key stakeholder group, one SACH physician expressed concern that GMC maintained a tertiary care mindset in contrast to a primary care mindset - the mindset embraced by existing SACH physicians. There was also upset voiced by existing SACH medical staff over a perceived failure of GMC

to immediately honor its commitment to provide specialty care services in Shamokin. For many SACH physicians, the inability to expediently place GMC specialists in SACH's primary service area exemplified GMC leadership's failure to secure the commitment of employed GMC physicians before the merger. Finally, these issues plus other concerns with GMC spurred a number of physicians to change their practice patterns in ways that negatively affected G-SACH's ability to serve its community.

Another stakeholder group, Shamokin business interests, experienced setbacks in the wake of the GMC merger. For example, prior to GMC, a local broker in Shamokin handled the property plant equipment and liability insurance needs. Since GMC is self-insured, contracts for these and other services now came out of Danville, not Shamokin. Providers of professional services to the hospital lost a customer in the hospital. Similar changes affected local food distributors, linen services, and service agreements with companies to service and maintain lab equipment.

General community support for the merger with GMC was strong. Yet the community was not void of criticism or concern. One issue that garnered appreciable upset and negative commentary was the implementation of the GMC charge master. Long time members of the community who used SACH services could not understand why the same services they received for years were now priced significantly above rates charged prior to the merger.

Additionally, there was community concern over GMC's conditional commitment. It was widely known at the time that when GMC acquired Mercy Hospital in Wilkes Barre in 2005, it transformed the hospital into an ambulatory care center, essentially eliminating inpatient care services in the former hospital's service area. The SACH community was concerned GMC would do the same to them.

Discussion: Community Health Outcomes and Impacts

As the SACH community managed transition issues, it appear real progress was made to address many of the pressing concerns that spurred the merger. A conclusive assessment of the merger's success, however,

requires examination of achievement in four separate but related goals: First, did the merger result in increased rural community healthcare capacity and positive changes in the community's health status? Second, were investments made to increase healthcare capacity based on a documented community need? Third, are new methods of healthcare delivery in line with recommended rural health practices? And fourth, did the merger improve quality, service efficiency, and accessibility?

Goal #1

As it pertains to healthcare capacity, SACH now as G-SACH was able to: reverse its financial decline; invest in the physical plant; invest in human resources; and expand the scope of services. These advancements were temporarily offset by a decline in the number and types of physicians serving the community as the result of actions by certain members of the SACH medical staff immediately following the merger.

The ability of G-SACH to be reimbursed for services at GMC system rates positively affected the hospital's financial position. Efforts to improve the physical plant in ways that would ensure the organization's viability in a rapidly changing healthcare environment soon followed. Improvements included the replacement of 20-year-old hospital beds, new IV pumps, a new medication dispensing system, the addition of three new operating rooms and two new endoscopy suites, and an $800,000 call-bell system upgrade. An important addition was the hospital-wide installation of the electronic health information system employed throughout GMC facilities—the EPIC Health Information System.

Efforts were also taken to invest in G-SACH's staff. For example, G-SACH supported educational enhancement of its nurses through loan forgiveness programs and tuition reimbursement. Financial resources the from GMC Endowment Funds supported RNs, LPNs and other allied health professionals for such things as books for school, membership in professional organizations, conference attendance, professional certifications and renewals, and exam fees.

G-SACH also sought to broaden its clinical offerings. In collaboration with the GMC main campus, G-SACH began to offer a series of telemedicine programs recommended for rural community care.[63] SACH initiated a tele-stroke program in the Emergency Department where a neurologist was available at a computer at the GMC main campus and G-SACH nurses were trained to dispense the needed medications, all within a short-time frame. In addition to tele-stroke, G-SACH provided behavioral healthcare through a tele-psych program with GMC. The hospital also now offers a cardiac arrest program called, Therapeutic Hypothermia, which is linked in with GMC's cardiac protocols, whereby care is initiated at G-SACH to stabilize patients before transporting them to the main GMC campus in Danville.

One area that was negatively impacted by the merger was medical/surgical services. With the transition to GMC control, independent physicians who historically utilized SACH, and were critical to its success, chose to no longer practice at the newly designated G-SACH. This included a number of independent family practice physicians, and most notably, the Sun Orthopedic Group. This loss, coupled with the initial reluctance of GMC specialists to relocate at least a portion of their practice hours to Shamokin, diminished G-SACH's capacity to serve the community. This was evidenced by the hospital dip in surgical volume. Unfortunately, as one SACH physician noted, "GMC's promise to provide greater access to medical specialists has not materialized as quickly as expected," thus leaving a void in access to needed services. "Health access risks remain," he concluded. Indeed, even with three new operating rooms and two new endoscopy suites, SACH found it challenging to convince Danville physicians to "drive over the mountain" to provide specialized care, as one senior administrator put it. The thinking is, if they (G-SACH) can get the physicians to spend some time at the hospital, they will be impressed with the kind, caring and efficient staff, the new rooms and equipment, and the quality of care reflected in very low infection rates. On-going marketing efforts by G-SACH administrative and medical staff, as well as GMC- Main Campus staff, have resulted in improvements in this area but additional effort is required.

[63] "Telehealth Use in Rural Healthcare." Rural Health Information Hub. Retrieved from https://www.ruralhealthinfo.org/topics/telehealth March, 2017.

On balance, increased revenue, investment in physical and human resources and the improving presence of medical and surgical specialists on the G-SACH campus have resulted in improved healthcare capacity since the merger. Evaluation of the impact on community health status as a result of changes in healthcare capacity cannot be made at this time given the brief time the merger has been in existence and the complexity of isolating with confidence those healthcare capacity factors directly influencing community health status.

Goal #2

Identified community healthcare needs influenced G-SACH's ongoing collaboration with GMC-Main Campus to improve care for the G-SACH service area. The most recent community health needs assessment/action plan outlines specific actions and programs targeted at improving health literacy and health behavior; affordability and access to care; and, behavioral health and substance abuse services.

The "Get Fresh Market" program is an example of a GMC-supported effort directly resulting from the community health needs assessment findings. The market, a bi-weekly farmers market running from May to September selling fruits, vegetables, and produce and located on the G-SACH campus began for employees, but there have been recent efforts to add vendors accepting WIC or food stamps as a way to engage members of the community in need of affordable fresh and healthy food.

As noted above, health affordability and access are identified needs issues. These needs are especially critical as they relate to primary care physician (PCP) services for the medically underserved to include those receiving assistance through Medicaid. Within the G-SACH service area, independent PCPs generally either do not accept Medicaid patients, or have capped their Medicaid patient numbers. Others do not offer evening hours. It is common knowledge that those without PCPs, primarily Medicaid patients—when in need of medical attention—go to the Emergency Room (ER). Indeed, from 2014 to 2015, the G-SACH emergency department experienced a 10 percent increase in visits. The Emergency

Department (ED) was configured for 14,000 annual visits; 21,000 visits were recorded in 2015. Approximately 35 to 40 percent of ER patients are "low acuity non emergent" (LANE). "On the one hand, it's great we're getting ED revenue for it," admitted an administrator. "But it's backing things up; it's just a mess."

Since no PCPs would open their practices to more Medicaid patients, and since no PCPs had succession plans in place—nor did anyone show interest in recruiting younger physicians to their practices—SACH senior administrators were left with three options to resolve the dilemma. G-SACH could: develop an urgent care center; establish employed physician primary care practices competing with existing private community PCP's; or develop a health center for the underserved. G-SACH administration rejected the urgent care option. As noted by a senior administrator, although the urgent care approach would immediately reduce ER visits by LANE patients, many community residents in the SACH service area frequenting the ER have chronic conditions and need the type of complete care they could only receive from PCPs; they need a medical home. The second option, establishing employed physician primary care practices, was not politically feasible given the initial reactions by independent physicians to the merger.

Goal #3

Senior administrator leadership selected the third possibility and are pursuing a *recommended rural healthcare strategy*[64]--the establishment of a Federally Qualified Health Center (FQHC) on the hospital campus in collaboration with Primary Health Network (PHN) and GMC who have identified an employed physician to serve as the Medical Director.[65] The introduction of an FQHC on the hospital campus provides access to a PCP, one that accepts Medicaid. As demand grows, so the thinking goes, so will the number of PCPs. And while it may sound counterintuitive, G-SACH leadership wants a significant portion of that 35 to 40 percent Medicaid LANE population utilizing the ER to find a new home at the

[64] "Federally Qualified Health Centers (FQHCs) Resources." Rural Health Information Hub. Retrieved from https://www.ruralhealthinfo.org/topics/federally-qualified-health-centers/resources March 2017.

[65] A Federally Qualified Health Center (FQHC) is more commonly known as a Community Health Center (CHC) and is a primary care center that is community-based and patient-directed. By mission and design, CHCs exist to serve those who have limited access to healthcare although all are welcome.

FQHC where they would receive more appropriate care at a lower cost. “This is kind of a stepping stone,” one senior administrator stated, “to eventually building a larger group practice,” a practice that could include behavioral and dental health services. It is a way to meet the affordability and access issues now experienced by a large portion of the community.[66]

Goal #4

Finally, there is evidence of efforts to improve service quality, operational efficiency, and accessibility. Initiatives to improve the overall quality of patient care are exemplified by two notable projects involving nursing services in one instance and pharmaceutical services in the other. A G-SACH nursing accomplishment in line with all other GMC campuses was certification as a Magnet Program.[67] In addition to improvement in nursing service quality, this effort generated secondary benefits to include incentivizing non-degree nurses to complete their bachelor degrees in nursing and helping maintain a nursing vacancy rate at G-SACH of less than 1 percent. Pharmacy, physician and nursing collaboration lead to the improved pharmaceutical management of anticoagulants and diabetic medications. G-SACH’s pharmacy administers an anticoagulation program for both inpatients and outpatients. When it was first introduced, physicians were hesitant, some unwilling to give up control, others unconvinced of the programs benefit. But within a short period of time, all physicians have turned their patients over to the pharmacy-managed program. Efforts to improve clinical as well as management efficiencies is best demonstrated by GMC’s investment in a system-wide electronic information system as previously documented. The electronic health information system is an essential requirement to improved patient management. And given the introduction of the FQHC, accessibility to care and the quality of care for those uninsured or underinsured patients, particularly those who lack a PCP, will be improved dramatically.

[66] In 2016 G-SACH successfully established a FQHC on its campus.
[67] The Magnet Recognition Program® recognizes healthcare organizations for quality patient care, nursing excellence and innovations in professional nursing practice. Consumers rely on Magnet designation as the ultimate credential for high quality nursing. Developed by the American Nurses Credentialing Center (ANCC), Magnet is the leading source of successful nursing practices and strategies worldwide.

G-SACH today continues forward as a full-service, 70-bed community hospital. G-SACH provides its nine ZIP-code service area with emergent care, surgical services, rehabilitation services (cardiac, physical, occupational and speech therapy), ancillary testing (labs, radiology, echocardiography, etc.) and inpatient services including an inpatient geriatric unit. In addition to a 15-bed Skilled Nursing Facility, there is also a wide variety of outpatient specialty clinics offered such as cardiology, dermatology, gastroenterology, obstetrics/gynecology, orthopedics, pediatrics and urology.

Closing Remarks & Lessons Learned

Upon reflection, the interaction of several factors facilitated notable positive outcomes of this merger. Key SACH stakeholders were and remain committed to providing healthcare services located within the community; SACH's Board of Directors and administration strategically governed and managed in a professional and ethical way when faced with adversity. SACH administrators effectively steered the partnership search and transition processes always mindful to maintain trust, communication, and transparency among all participants when navigating the complex set of interactions required to reach the desired outcome. The selection of a partner with whom SACH had existing working relationships, a shared service area, and the resources and capabilities that complemented SACH contributed to these results. And finally, SACH's willingness to exploit a favorable condition within Medicare's convoluted regulatory framework helped ensure its financial future. Of course, the process was not without challenges. The transition issues reflect the difficulties of merging two healthcare organizations with distinctly different primary missions (research and teaching versus community-based care); governance models (physician based versus community representation); and resulting organizational cultures.

Appendix A: The Community Served (GSACH)

Exhibit A-1 Population Density

The data represent population density by ZIP code within G-SACH's primary service area. The values represent the distance in standard deviation (77 residents per square mile) from the Rural Pennsylvania Mean Population Density per Square Mile (110 residents per square mile). The table depicts community with population densities per ZIP code for the most part well above the state mean for rural communities. Population dispersion directly impacts a health system's ability to provide timely and convenient service in an economically sustainable way. In this instance the population concentrations help offset time and distance access barriers common in many rural communities.

ZIP Code	Description	County	Density per Sq Mile	Square Miles	Population	Z Score Based on Mean Rural Pa. Density
17801	Sunbury	Northumberland	252	66.12	16681	1.97
17872	Shamokin	Northumberland	245	40.57	9943	1.87
17851	Mount Carmel	Northumberland	518	15.15	7841	5.67
17866	Coal Township	Northumberland	411	25.09	10310	4.18
17834	Kulpmont	Northumberland	695	05.13	3565	8.13
17881	Trevorton	Northumberland	327	04.75	1556	3.01
17860	Paxinos	Northumberland	76	16.40	1994	-.48
17824	Elysburg	Northumberland	156	26.41	4115	.64
17832	Marion Heights	Northumberland	1606	00.40	628	20.79

Source: U. S. Census Bureau (2014 American Community Survey) (Population data)

Exhibit A-2 G-SACH Service Area Socio-Economic Data

		Sunbury	Elysburg	Marion	Kulpmont	Mt Carmel	Paxinos	Coal	Shamokin	Trevorton		
		17801	17824	17832	17834	17851	17860	17866	17872	17881	SACH	PA
Population		16671	3712	651	3739	7627	2467	10484	9718	1467	56536	12758729
Gender:	Male	48.70%	48.50%	49.50%	47%	45.80%	54.20%	63.20%	49.40%	44.60%	51.14%	48.80%
	Female	51.30%	51.50%	50.50%	53%	54.20%	45.80%	36.80%	50.60%	55.40%	48.86%	51.20%
Age:	Median	42.2	47.9	43.4	48.9	47.2	45.3	41.4	41.9	43.7	43.68	40.40
	18 years and under	21.40%	17.50%	18.70%	18.90%	17.70%	20.10%	14%	21.80%	18.10%	19.00%	21.50%
	65 years and over	16.60%	21.20%	20.40%	24.80%	22.10%	20.70%	17.60%	17.70%	18.30%	18.83%	16%
Race/Ethnicity	White	94.00%	98.60%	99.40%	98.70%	98.10%	99.30%	79.80%	98.30%	96.80%	93.64%	81.90%
	All Others	6.00%	1.40%	0.60%	1.30%	1.90%	0.70%	20.20%	1.70%	3.20%	6.36%	18.10%
Education	Less than High School	16.10%	9.50%	10.70%	11.60%	13.80%	10.70%	19.90%	14.60%	16.80%	15.23%	11%
	High School	49.40%	40.30%	49.50%	54.20%	53.10%	52.10%	53.20%	58.60%	50.20%	52.04%	36.80%
	Above High School	34.50%	50.20%	39.80%	34.20%	33.10%	37.30%	26.90%	26.80%	33%	32.73%	52.20%
Personal Income	Mean Household Income	$60,516.00	$62,822	$59,285	$54,270	$33,297	$60,812	$47,573	$45,185	$48,230	51226.89	$72,210
	Per Capita Income	$21,533.00	$28,717	$26,235	$24,086	$20,972	$23,808	$16,788	$20,160	$21,546	21135.68	$28,912
Unemployment	Unemployment Rate	5.40%	2.80%	8.10%	3.30%	4.40%	6.90%	3.40%	7%	2.60%	4.88%	5.40%
Health Insurance	Public Health Insurance	38.90%	29.90%	34.70%	38.80%	41.20%	38.40%	43.50%	40.70%	37.20%	39.66%	31.90%
	No Health Insurance	12.30%	4.20%	9.40%	3.80%	10.60%	9.60%	11.90%	12.20%	11.50%	10.71%	9.50%
Poverty Status	Family	11.20%	4.20%	11.80%	8.10%	12%	8%	11.90%	10.10%	8%	10.37%	9.30%
	Individuals	16.20%	5.10%	13.70%	12.80%	17.50%	8.50%	15.40%	17.70%	14.80%	15.13%	13.50%

Source: U. S. Census Bureau (2014 American Community Survey).

Exhibit A-3 G-SACH Business and Industry Employment Profile

Business and Industry Sectors	Sunbury	Elysburg	Marion	Kulpmont	Mt. Carmel	Paxinos	Coal	Shamokin	Treverton	G-SACH	PA
Agriculture, forestry, fishing and hunting, and mining	2.05%	1.50%	0.00%	1.20%	2.20%	6.50%	1.10%	2.00%	3.60%	**2%**	**1.40%**
Construction	4.35%	8.90%	8.70%	4.00%	6.30%	7.40%	9.50%	4.40%	7.70%	**7%**	**5.70%**
Manufacturing	12.12%	13.20%	15.80%	10.90%	14.50%	10.40%	10.80%	14.30%	25.00%	**14%**	**12.20%**
Wholesale trade	2.61%	0.20%	0.00%	0.00%	2.70%	3.80%	2.70%	1.80%	1.70%	**2%**	**2.80%**
Retail trade	14.03%	9.00%	5.70%	14.50%	15.50%	16.30%	8.30%	16.80%	12.50%	**13%**	**11.80%**
Transportation and warehousing, and utilities	5.67%	3.20%	6.70%	4.40%	4.90%	4.00%	4.90%	4.30%	5.00%	**5%**	**5.10%**
Information	1.71%	0.00%	3.00%	0.60%	0.30%	0.00%	1.90%	0.80%	1.00%	**1%**	**1.70%**
Finance and insurance, and real estate and rental and leasing	3.99%	4.50%	3.70%	6.30%	4.30%	2.40%	2.20%	4.20%	0.00%	**4%**	**6.40%**
Professional, scientific, and management, and administrative and waste management services	5.39%	3.30%	0.70%	3.80%	1.70%	2.30%	6.10%	5.70%	5.10%	**4%**	**9.80%**
Educational services, and health care and social assistance	27.87%	33.10%	28.20%	31.40%	29.00%	26.00%	29.00%	26.60%	21.90%	**28%**	**26.00%**
Arts, entertainment, and recreation, and accommodation and food services	9.28%	7.10%	5.00%	6.90%	3.50%	7.30%	10.80%	9.70%	5.30%	**7%**	**8.30%**
Other services, except public administration	3.76%	6.50%	8.40%	4.80%	6.30%	8.20%	3.50%	4.20%	3.30%	**5%**	**4.70%**
Public administration	7.17%	9.70%	14.10%	11.00%	8.80%	5.50%	9.20%	5.30%	7.90%	**9%**	**4.10%**

Percentages represent civilian employed population 16 years and older residing within primary service area.
Source: U. S. Census Bureau (2014 American Community Survey).

Appendix B: Community Health Status, Needs and Resources

Exhibit B-1 Health Behavior Data

Description	Northumberland County (2015)	Pennsylvania (2015)	Northumberland County (2014)	Pennsylvania (2014)	Northumberland County (2013)	Pennsylvania (2013)	Northumberland County (2012)	Pennsylvania (2012)	Northumberland County (2011)	Pennsylvania (2011)	Northumberland County (2010)	Pennsylvania (2010)
Adult Smoking	23%	20%	23%	20%	26%	21%	25%	21%	26%	22%	27%	23%
Adult Obesity	35%	29%	34%	29%	32%	29%	32%	29%	28%	28%	29%	28%
Physical Inactivity	29%	24%	31%	26%	31%	26%	31%	26%	N/A	N/A	N/A	N/A
Excessive Drinking	16%	17%	16%	17%	19%	17%	17%	18%	18%	18%	N/A	N/A
STD's (per100,000)	251	431	231	415	175	374	150	346	188	340	N/A	N/A
Teen Births (per1000)	34	28	35	29	35	29	39	31	39	31	40	31

Source: Robert Wood Johnson County Health Rankings and Roadmaps.

Exhibit B-2 Morbidity Data

Description	Northumberland County (2015)	Pennsylvania (yr)	Northumberland County (2014)	Pennsylvania (yr)	Northumberland County (2013)	Pennsylvania (yr)	Northumberland County (2012)	Pennsylvania (yr)	Northumberland County (2011)	Pennsylvania (yr)
Poor Physical Health Days (ave. past 30days)	3.6	3.5	3.6	3.5	3.6	3.5	3.7	3.5	3.9	3.5
Poor Mental Health Days (ave. past 30days)	3.6	3.6	3.6	3.6	3.7	3.6	3.7	3.6	3.5	3.6
Diabetes	12%	10%	11%	10%	10%	10%	10%	10%	10%	9%
HIV Prevalence (per 100,00))	88	292	88	292	93	293	102	294	98	N/A
Drug Poisoning Deaths (per 100,000)	10	15	10	14	N/A	N/A	N/A	N/A	N/A	N/A

Source: Robert Wood Johnson County Health Rankings and Roadmaps

Exhibit B-3 Mortality Data

Description	Northumberland County (2010-12)	Pennsylvania (2010-12)	Northumberland County (2009-11)	Pennsylvania (2009-11)	Northumberland County (2008-10)	Pennsylvania (2008-10)	Northumberland County (2007-09)	Pennsylvania (2007-09)	Northumberland County (2006-08)	Pennsylvania (2006-08)
Heart*	222.7	181.5	229.5	186.6	228.8	194	234.2	203.2	249.5	215.4
Cancer	176.1	176.7	176	180	187.5	183.8	193	187.6	197.9	191.6
Stroke	40.4	38.3	39.7	39.3	42.2	40.1	42.3	42.6	45.1	45.3
CLRD	44.3	38.6	47.6	38.9	48.1	39.9	47.9	40.6	42.8	40
Accidents	43.6	42.3	40.6	40.8	39.7	40.4	43.9	40.8	47.6	40.9
Alzheimer's	26	19.2	23.1	19.3	19	20.6	16.1	21.4	22.2	22.5
Diabetes	18.4	20.8	21	20.2	21.4	20.4	23.2	21.4	19.8	22.4
Nephritis	21.4	16.9	22.2	17.7	23.4	18.6	24.9	19	25.7	19.9
Influenza	20.5	14.1	20.7	14.7	18	15	21.9	16	25.4	17.1
Septicemia	18.3	13.1	18.4	13.7	20	14.2	22.3	15.2	23.6	16.2
Age Adjusted Death Rate (1000)	8	7.5	8.7	7.7	8.2	7.6	7.7	7.7	8.9	8.1
*per 100,000										

Source: Pennsylvania Department of Health County Health Profiles.

Exhibit B-4 Health Access Risk

The data represent population health access risk values by ZIP code within G-SACH's primary service area. The value of each of the rural ZIP codes is standardized to the mean for the combined rural ZIP codes in Pennsylvania. The values represent the distance in standard deviation from the Rural Pennsylvania Mean Health Access Risk value of zero. The data reveal community with health access risk values (those with positive values) per ZIP code for the most part above the state mean.

ZIP Code	Description	County	Population	Health Access Risk z-of-z score
17801	Sunbury	Northumberland	16681	.521
17872	Shamokin	Northumberland	9943	.748
17851	Mount Carmel	Northumberland	7841	.534
17866	Coal Township	Northumberland	10310	.843
17834	Kulpmont	Northumberland	3565	-.227
17881	Trevorton	Northumberland	1556	.266
17860	Paxinos	Northumberland	1994	-.370
17824	Elysburg	Northumberland	4115	-.997
17832	Marion Heights	Northumberland	628	-.067

Source: U. S. Census Bureau (2014 American Community Survey) (Population data).

Exhibit B-5: Community Health Resources

Description	Pennsylvania (State Total)	Northumberland County
HOSPITALS & NURSING HOMES		
General Acute Care Hospitals, 2013-14	157	2
Hospital Beds Set Up & Staffed, 2013-14	32,525	49
Beds Set Up & Staffed Per 1,000 Residents	2.54	1.80
# Nursing Homes, 2014	701	9
# Total Licensed/Approved Nursing Home Beds, 2014	88,063	1,016
Total Licensed/Approved Nursing Home Beds Per 1,000 Residents, 2014	6.89	10.81
OFFICES OF PHYSICIANS AND DENTISTS		
# Physicians Offices (NACIS 6211), 2013	8,887	44
# Physicians Offices Per 100,000 Residents, 2013	69.5	46.7
# Dentists Offices (NACIS 6212), 2013	5,169	26
# Dentists Offices Per 100,000 Residents, 2013	40.4	27.6

Sources: Pennsylvania Department of Health (Hospital and Nursing Home data).
U. S. Census Bureau County Business Patterns (Physician and Dentist data).

Exhibit B-6 Shamokin Area Community Hospital Historical Timeline

Date	Event	Date	Event
1912	Shamokin State Hospital opens	1992	State conveyed to Community and renamed Shamokin Area Community Hospital
1939	Hospital auxiliary formed	2001	Electrical system upgrade and ER expansion completed
1955	Corner shop opened by auxiliary	2003	New West Wing – Surgical Suite, Same-Day Surgery, new Lab, new Central Supply, Med/Surgical Units
1961	Hospital renamed Shamokin State General Hospital	2004	Updated Critical Care Unit
1963	New Wing built containing OR, Central Supply Food Service, Cafeteria and Office Space	2005	New Front Entrance
1969	New Wing built containing Maternity, Lab, and ER	2006	Image Service expansion, HVAC Renovations completed
1974	Coronary Unit added	2007	Women's Health Center opened, fixed-site MRI put in place
1980's	Medical units renovated	2009/12	Merger process with GMC resulting In full merger and renaming to Geisinger Shamokin Area Community Hospital

Exhibit B-7 SACH Organization Chart (Revised February 18, 2008)

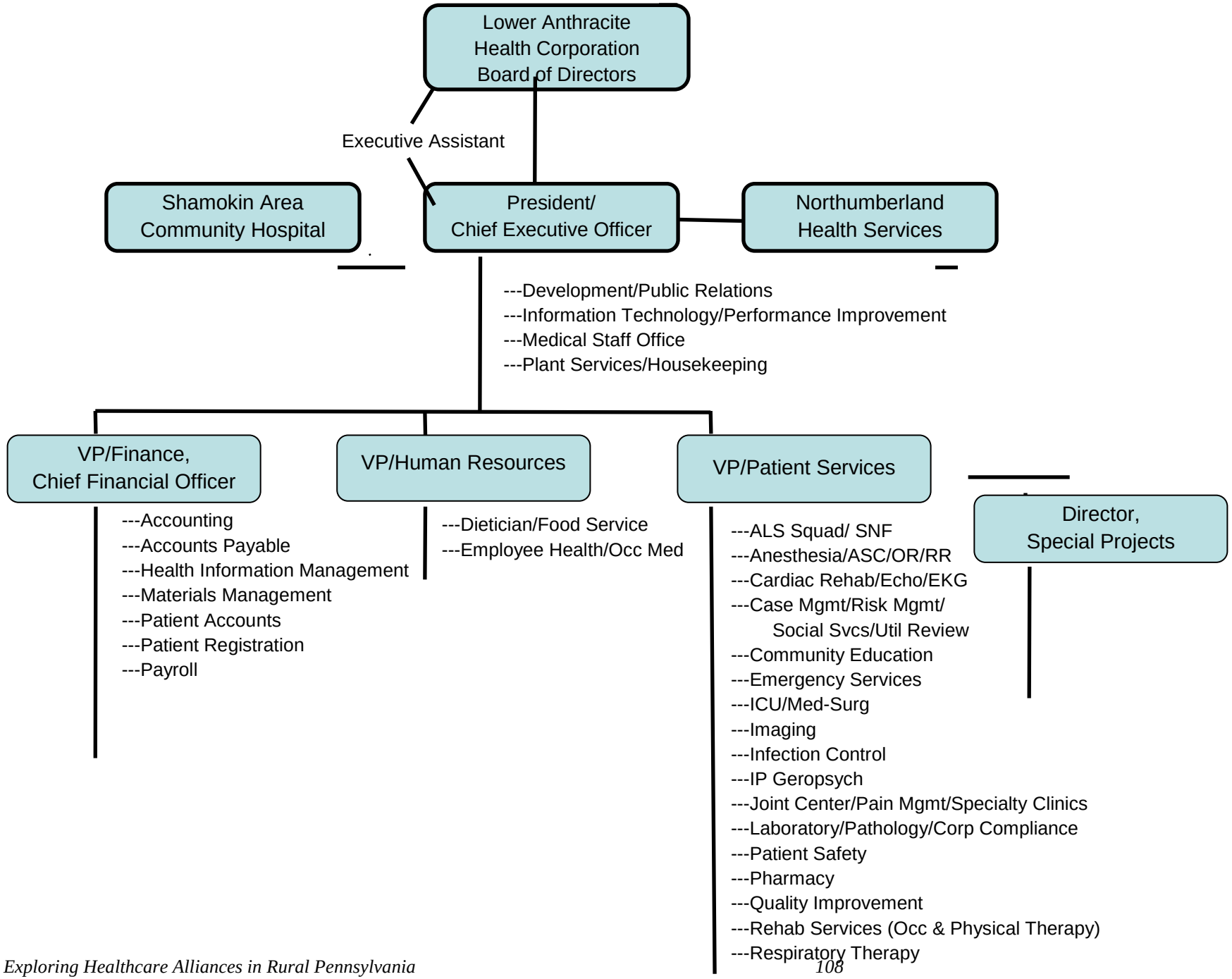


Exhibit B-8 Shamokin Area Community Hospital Operational Data

Shamokin Area Community Hospital					
Hospital Report	2007	2008	2009	2010	2011*
Long Tern Care Unit	yes	yes	yes	yes	yes
Licensed Beds	55	55	55	55	55
Beds Set Up and Staffed	55	55	55	55	55
Admissions	2990	2750	2592	2478	1145
Discharges	2990	2764	2592	2478	1169
Patient Days of Care	13667	12909	11524	11998	5215
Discharge Days	13667	12909	11524	11998	5215
Bed Days Available	20130	20075	20075	20075	10120
Average Length of Stay	4.57	4.67	4.45	4.84	4.46
Occupany Rate	67.9	64.3	57.4	59.8	51.5
Live Births	1	0	0	0	0
Inpatient Surgical Operations	984	877	723	727	558
Outpatient Surgical Operations	4468	4988	4749	4170	3940
Total Surgical Operations	5452	5865	5482	4897	4498
Medical Staff (Board Certified)	31	36	34	34	28
Medical Staff (Other)	13	13	10	8	8
Total Medical Staff	44	49	44	42	36

*Data represents fiscal years from July 1-June 30. FY 2011 represents six months of activity. On January 01, 2012 Shamokin Area Community hospital merged with Geisinger Medical Center.

Source: Pennsylvania Department of Health Hospital Statistical Reports.

Exhibit B-9 Shamokin Area Community Hospital Quality Data

	Percent of Patients Highly Satisfied		Recommended Care		Readmission Composite	
	SACH	PA	SACH	PA	SACH	PA
2011	72.67%	65.34%	92.74%	97.67%	21.95%	22.00%
2010	79.00%	64.75%	94.06%	96.25%	NA	NA
2009	75.25%	63.34%	92.96%	95.00%	NA	NA
2008	72.00%	NA	86.33%	94.00%	NA	NA

Percent of Patients Highly Satisfied (This measure is used to assess adult inpatients' perception of their hospital. Patients rate their hospital on a scale from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible. Highly satisfied 7.0-10.0)

Overall Recommended Care (This measure is a weighted average of all the process-of-care, or "core" measures, reported on CMS Hospital Compare)

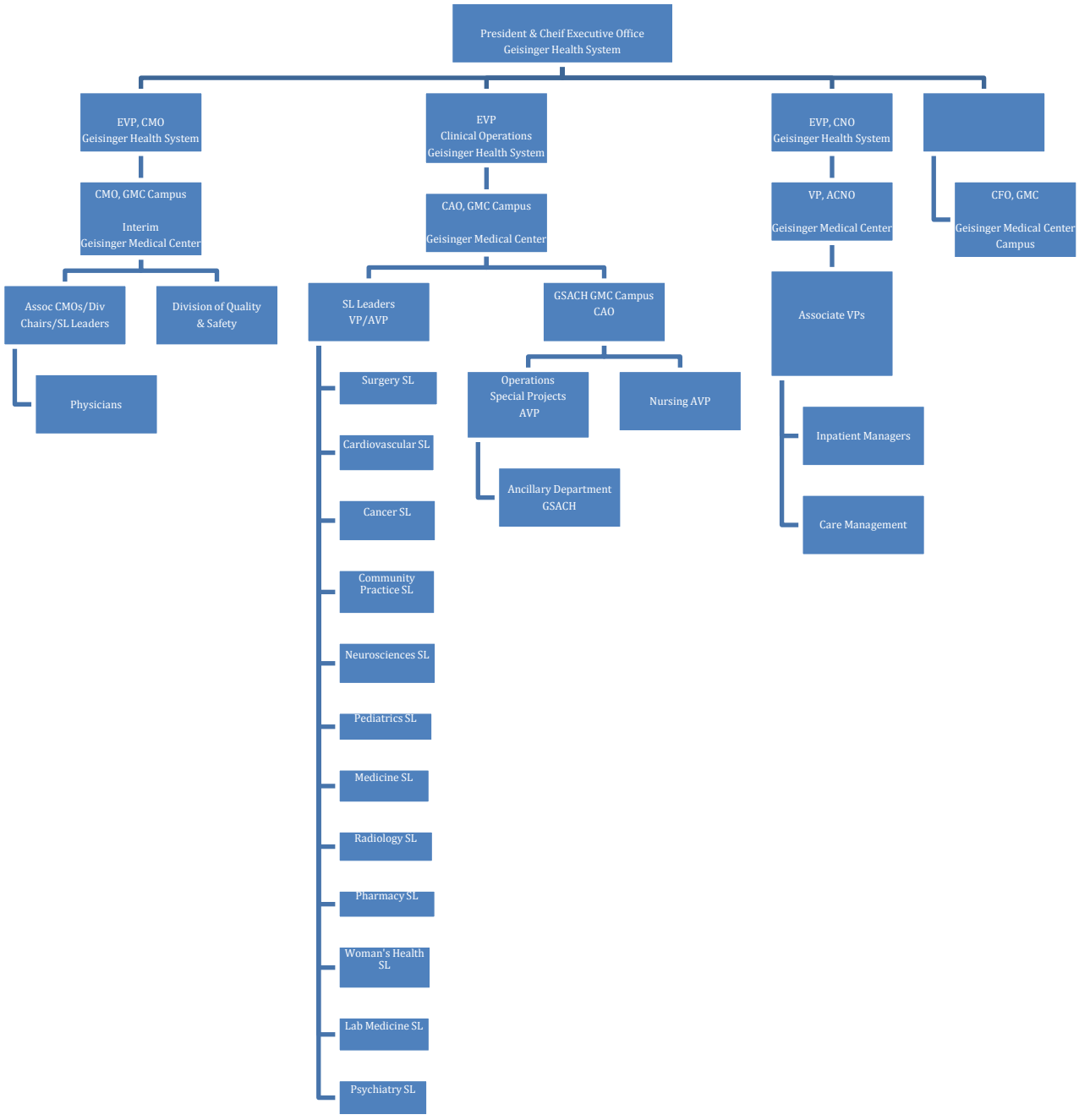
Readmission Composite (Average Medicare hospital 30-day readmission rates for heart failure, heart attack, stroke, VTE, and pneumonia) Source: WNTB.org (Why Not the Best)

Exhibit B-10 Shamokin Area Community Hospital Financial Data

(000's)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Operating Margin	6.36%	4.89%	-0.79%	-1.28%	-2.61%	-20.40%
Total Margin	7.38%	5.79%	-0.51%	0.21%	-0.58%	-17.49%
Operating Revenue	$34,020	$36,956	$35,802	$35,102	$35,994	$16,790
Operating Income	$2,163	$1,806	($283)	($449)	($941)	($3,425)
Total Income	$2,509	$2,138	($181)	$73	($209)	($2,937)

Source: Pennsylvania Health Care Cost Containment Council.

Exhibit B-11 Post Merger Administrative Structure: Geisinger Health System



Case #4: Penn Highlands Healthcare: The Formation of a Multi-Hospital Partnership

Case Summary

Penn Highlands Healthcare (PHH) represents the culmination of 7 years of collaboration and consolidation among four west central Pennsylvania community hospitals—Dubois Regional Medical Center (DRMC), Brookville Hospital (BH), Clearfield Hospital (CH), and Elk Regional Health Center (ERHC)—and their medical staffs. The first step in this journey took place in 2007 when, at the request of the Brookville Hospital Board of Directors, Dubois Regional Medical Center (DRMC) assumed management responsibilities for Brookville Hospital (BH). In 2009, DRMC strengthened its ties to BH when both the BH and DRMC Boards of Directors agreed to integrate BH into DRMC as a subsidiary organization. Two significant events followed in 2011. After a year of negotiations, the boards of Clearfield Hospital (CH) and DRMC approved a definitive agreement formally linking the two institutions. Terms of the agreement stipulated the formation of a corporate governance and management structure possessing certain reserved powers over DRMC, CH, and BH, the subsidiary of DRMC. A parent company created for this purpose, Penn Highlands Healthcare (PHH), was officially formed on September 30, 2011. On July 01, 2013, PHH took its most recent step toward regional consolidation with approval of an affiliation agreement between PHH and the Elk Regional Health Center. In February 2014, PHH changed the names and logos of its four hospitals in line with its medical group practice, Penn Highlands Physician Network (PHPN), to publicly reflect the Penn Highlands brand. The four healthcare organizations today are known as Penn Highlands Brookville (PHB), Penn Highlands Clearfield (PHC), Penn Highlands DuBois (PHD) and Penn Highlands Elk (PHE).

The formation of Penn Highlands Healthcare (PHH) was initially precipitated by financial concerns. Community hospitals, particularly rural community hospitals, continue to experience financial stress. Hospital revenue growth is not keeping pace with expense increases. Challenges to revenue growth may be traced to unfavorable trends in hospital service volume, service mix, rates of reimbursement, and uncompensated care. Overall, service volumes are declining with significant erosion in inpatient volumes, which are negatively impacting hospital revenue. Advances in medical technology continue to rebalance

the mix of hospital services in favor of outpatient services. Decreases in revenue per service (outpatient versus inpatient) result in lower overall hospital revenue. And, hospital net revenue numbers remain challenged as reimbursement rates from government plans (entitlement and means tested) and private insurers decrease in real terms at the same time as uncompensated care increases.

Beyond addressing immediate financial concerns, the formation of PHH was motivated by significant change with long-term implications taking place in the healthcare environment. Driven by social and economic forces, system change was inevitable. The passage of the Affordable Care Act accelerated this process. The accelerated pace of change intensified concerns over the adaptability of all healthcare institutions to a newly emerging competitive landscape. In this evolving environment, individual healthcare institutions are expected to assume greater accountability for the management of population and individual health. This requires a new set of skills and technologies best suited for regionally coordinated healthcare systems. Linking the four community hospitals initially offered a foundation to weather the sea change in healthcare financing and service delivery. Over time, leaders hoped the foundation created by the four hospitals would lead to ongoing success during the transformation of the nation's health system and beyond.

As a four-hospital health system, PHH is moving forward with its mission to secure, enhance and expand quality healthcare services in the eight-county region it serves. PHH progress through 2016 is notable in the areas of financial management, clinical quality improvement, physician recruitment, and service innovation and expansion. Challenges remain as PHH attempts to further integrate care at a regional level, address identified community healthcare needs, and stabilize and improve system financial performance.

Upon reflection, PHH's success may be attributed to the following: the existence of a common set of beliefs shared by the leadership of all four institutions; collective agreement on a common vision and mission; the creation of an organization that was based on a common set of beliefs and guided by a shared

vision and mission; and, the ability to pursue the mission as equal partners in a purposeful way by realizing planned strategies and exploiting emergent opportunities.

The Community Served

The four Penn Highlands Healthcare (PHH) hospitals have historically served four separate but overlapping markets. The combined service area of the four hospitals ranges over an 8,250 square mile area encompassing 410,000 individuals residing in eight Pennsylvania counties--Elk, Jefferson, Clearfield, McKean, Forest, Cameron, Clarion and Centre County. The majority of individuals served by PHH reside in four of the eight counties most proximate to the four PHH hospitals. These include Clarion, Clearfield, Elk and Jefferson counties.[68] An initial review of the characteristics of the four PHH hospital markets reveals numerous similarities, but a closer examination shows several distinct differences. From an economic perspective, the industrial composition of the four markets share similarities. True to the region's history, the level of agriculture, forestry, and mining activity in all four markets are above the state average. In contrast, the financing, insurance and real estate segment as well as the professional, scientific and management services across markets trail behind state averages. Interestingly, levels of unemployment appear uniformly lower than the state's. In regard to demographic characteristics, an evident commonality is the homogeneity of the population. In each of the markets the populations are white with minimal exception. More strikingly, in the four county region that includes the four markets, populations are decreasing. Not surprisingly the average age across the markets are marginally higher than the average for Pennsylvania. Levels of educational attainment lag behind statewide averages as does mean household and per capita income. And finally, across all four markets, dependence on publicly financed health insurance plans is greater than statewide levels of utilization. Differences in markets become apparent only when completing across market comparisons. There are measurable differences in industry composition, levels of unemployment, household and individual wealth, dependence on publicly sponsored health plans, access to health insurance, and levels of poverty. In rank order, markets with

[68] PH service area includes the following 11 ZIP code areas: 16240; 16242; 16214; 16255; 15801; 16239; 15825; 15860; 15767, 15864, and 15829.

more favorable results across these measures begin with Elk followed by Dubois, Brookville, and Clearfield. Each market has characteristics that present different opportunities and challenges for achieving and maintaining positive community health outcomes (See Appendix A).

Community Health Status, Needs and Resources

Community health status is determined by social and economic disparities community members experience as a consequence of where they are born, raised and live out their lives. On an individual basis, health status is further impacted by the personal health risks each community member accepts throughout his/her life. In general, a higher than average personal health risk tolerance is accepted among lower socioeconomic groups.[69] Many of those across Penn Highlands four traditional markets may be categorized as members of a lower socioeconomic group relative to the average socioeconomic status of Pennsylvania residents (See Exhibits A2a, A2b, A2c, A2d). And, the decisions and actions of residents within the four-county area (Clarion, Clearfield, Elk, and Jefferson) that include Penn Highland's core markets both mimic the patterns of all state residents, and in some instances, demonstrate a greater propensity toward behavior harmful to individual health. Higher risk tolerance among residents of several of the counties (Elk, Jefferson) is revealed in higher adult smoking rates, physical inactivity and excess drinking rates relative to Pennsylvania averages (See Exhibits B1a, B1b, B1c, B1d). Within certain counties (Clearfield, Elk, Jefferson) the combination of socioeconomic status and unhealthy behavior patterns appear to be related to higher than average population morbidity rates as evidenced in consistently higher than average "poor physical health days" and "poor mental health days" self-reported by residents of the four counties (See Exhibit B2a, B2b, B2c, B2d). Mortality rates among residents of several of the counties (Clarion, Clearfield, Jefferson) also indicate a population that is, on the whole, less healthy than other state residents. The age-adjusted death rate in these three counties is markedly higher than the Pennsylvania average rate. Specific causes of death--heart, stroke, CLRD, diabetes, and nephritis--are consistently above Pennsylvania average rates in most or all of the four counties (See

[69] Lantz, Paul M. et al. (1998). Socioeconomic Factors, Health, and Morbidity. *JAMA.* Vol. 279 no. 21:1703-1708. Pampel, Fred C. et al. (2010. Socioeconomic Disparities in Health Behavior. *Annual Review of Sociology.* Vol 36: 349-370.

Exhibit B3a, B3b, B3c, B3d). Finally, the "health access risk values" for several ZIP code areas within the PHD and PHC core markets are greater than the average value for all Pennsylvania rural communities (See Exhibits B4a, B4b, B4c, B4d). The above average values signify that the healthcare needs of these communities exceed the average needs of rural communities in Pennsylvania and the economic resources available to access care by community members are less than those available within the average Pennsylvania rural community.

Over time, community health needs assessment reports have well documented the population healthcare needs of the markets served by the four Penn Highland Campus system.[70] The characterization of the population, its healthcare status and healthcare access risk described above align with the most recent assessment report completed in 2015. Based on the 2015 needs assessment, identified areas of need common to all communities served by Penn Highlands Healthcare in order of priority include: behavioral health and substance abuse; nutrition and wellness; access to care; and, care coordination.

Healthcare needs for the four county region that include Penn Highland Healthcare markets have been and remain significant. The availability of healthcare services in this rural setting varies by county. Combined acute care service resources for the four counties as measured by acute care hospital beds staffed per 1,000 residents, physician offices per 100,000 residents and dentist offices per 100,000 residents remain at or above Pennsylvania averages with the exception of dental services that are significantly below the state average (See Exhibit B-5). Although the statistical data for medical services appear positive, the data do not fully address accessibility measures. Factors that influence accessibility to healthcare services include the times provider offices are open, where the provider offices are located relative to patients, and provider payment policies including the selection of insurance plans in which

[70] Community health needs assessments (CHNA) and implementation strategies are newly required of tax-exempt hospitals as a result of the Patient Protection and Affordable Care Act. These assessments and strategies create an important opportunity to improve the health of communities. They ensure that hospitals have the information they need to provide community benefits that meet the needs of their communities. They also provide an opportunity to improve coordination of hospital community benefits with other efforts to improve community health. By statute, the CHNAs must take into account input from "persons who represent the broad interests of the community served by the hospital facility, including those with special knowledge of or expertise in public health."

they participate. In this instance, these barriers must be pronounced based on the community healthcare needs assessment findings. At the present time, much of the medical resources available across the four counties represent Penn Highlands Healthcare assets. Anchored by the four community hospitals, each with a history of service to their respective community in excess of 100 years, Penn Highlands Healthcare includes 3,636 employees, of which 130 are advanced practice providers (Physician Assistants and Nurse Practitioners). And, 363 (148 physicians directly employed by PHH) are physicians practicing as members of the Penn Highlands Physician Network (PHPN). There are 387 hospital beds with 138 categorized as long-term care beds.[71] In addition to the four hospitals, PH includes four home-health agencies, two cancer treatment centers, two surgical centers, seven walk-in urgent care centers, one long-term care facility, and one senior residential living facility.

Factors Leading to Affiliation

The leaders of the four hospitals were motivated to collaborate because of immediate operational and financial concerns related to the dramatic and permanent changes taking place within the healthcare environment. The underlying social, economic, and technological factors reshaping the healthcare environment revealed themselves in steep decreases in inpatient volumes, shorter lengths of inpatient stay, reduced reimbursement from government and private insurers, dramatic increases in bad debt and uncompensated care, and a sustained shift toward outpatient procedures. In the short term, all of these trends negatively impacted hospital operations and endangered the financial viability of each institution. It was clear that hospitals would be required to change the way they served their communities to sustain themselves. Political action in the form of landmark legislation—the Affordable Care Act—made the need to take action even more imperative by accelerating the change process already in progress in two ways. First, the legislation reduced financial barriers to care. Second, the legislation incentivized healthcare institutions to accept greater accountability for the health of their communities as well as individuals through the coordination of care at community and/or regional levels. The recognition of these changes are best captured by the comment of PHH first Chief Executive Officer and former DRMC

[71] https://www.PHHealthcare.org/about/about-penn-highlands-healthcare/page.aspx?id=1597, Accessed on June 6, 2016.

President, Mr. Ray Graeca, in the first issue of the PHH newsletter, *Vital Lines*.

> We're facing a very different healthcare delivery environment today than we were five years ago, and the American Hospital Association is projecting that the next five years alone will hold more change than we've seen in the past 75 years combined.

In response to the changing environment, Mr. Graeca further stated:

> Penn Highlands Healthcare is taking the steps necessary to ensure that we are positioned to keep pace with that change … When we formed Penn Highlands Healthcare, our mission was to secure, enhance, and expand quality healthcare services in the eight-county region we serve.

At the start of discussions between the hospitals, beginning with DuBois and Brookville in 2007, a well-articulated mission statement "to secure, enhance, and expand quality healthcare services in the eight-county region we serve" had not yet been crafted, nor had an organizational structure, such as PHH, been considered. An emerging multi-pronged strategy embodying the eventual mission goals, however, began to form. The unfolding strategy initially focused on the immediate concerns being experienced by the majority of U.S. hospitals. Moreover, the developing strategy attempted to address a major challenge more closely associated with rural hospitals—recruiting healthcare professionals to isolated and often times economically depressed communities, and retaining their services. These various strategic initiatives evolved throughout the partnership process and the formation of PHH. An intended strategy was collaboratively developed and formally communicated to all PHH partners only after PHH became operational.

The Partnership Process

DRMC, guided by then-DRMC-President Graeca, initiated actions that ultimately led to the development of Penn Highlands Healthcare. DMRC's first tentative step toward the creation of a regional health system resulted from its exploitation of an opportunity in 2007. A neighboring hospital, Brookville Hospital, was facing a critical financial dilemma and requested management and financial assistance. At the time, DMRC was well aware of the growing importance of regional collaboration but did not have a well-formulated regional strategic plan in hand. Nevertheless, DRMC responded positively to the request. DRMC's commitment to Brookville Hospital (BH) prevented a closure, ensured the continuation of needed services, and helped set the stage for future collaboration. It was not until DRMC reached an affiliation agreement with Clearfield Hospital (CH) that Penn Highlands Healthcare (PHH) was formed. The creation of PHH was a stipulation of the affiliation agreement that required the formation of a corporate governance and management structure that retained certain reserved powers over DRMC, CH, and BH. Indeed, Penn Highlands was not legally formed until 2011, with the introduction of Clearfield Hospital into the fold. Its first meeting as a health system was in October of 2011 in Clearfield, Pennsylvania, 4 years after the initial discussions with BH. Shortly following the CH affiliation, the newly formed PHH entered into preliminary discussions with healthcare systems located in Altoona, Johnstown, and State College. The meetings between the health systems, which took place between 2012 and 2014, did not progress beyond the discussion stage, and early on in these discussions PHH management soon refocused its energies on developing PHH. On July 1, 2013, PHH took its most recent step toward regional consolidation with approval of an affiliation agreement between PHH and the Elk Regional Health Center. Provided below is a brief summary of each hospital's partnership formation experience as well as PHH preliminary efforts to affiliate with a larger network.

Dubois Regional Medical Center

Prior to forming Penn Highlands Healthcare in October 2011 and becoming its first chief executive officer, Mr. Graeca was President of DuBois Regional Medical Center (DRMC), itself the merger in 1985

of Maple Avenue Hospital and DuBois Hospital. Of the four hospitals that currently make up Penn Highlands, DRMC is the largest institution based on bed capacity and patient days of care, serving the largest market, and, at the time of the initial discussions, in the best financial position (See Exhibits 1A, 11A, 13A). DRMC strategically developed physician leaders by supporting their attendance at national healthcare conferences to ensure they remained current with the changing healthcare environment. This investment in the medical staff enabled both groups to work together more effectively on mutual issues of concern through the hospital committee system structure. The collaboration between medical staff, administration and board resulted in an organization more nimble at finding solutions and more unified at executing these solutions.

Although a successful organization during the first decade of the current century, DRMC leadership, personified in Mr. Graeca, sensed a need to reposition the organization in anticipation of well documented predictions of industry change. At the time the precursors of permanent market change were being felt in the forms of dropping inpatient volumes, decreased reimbursement rates for care, rising operating costs and mandated technology upgrades. In rural communities experiencing both population losses and the effects of an economic downturn, challenges were compounded by the difficulties hospitals without succession plans faced in attracting and retaining new physicians to replace aging medical staffs. All four future PHH hospitals, including DRMC, were potentially facing a similar future, and it was not bright. When considering alternate scenarios, senior management at DRMC was warming to the notion that it would need to adopt a regional approach to healthcare in order to sustain operations. To a great extent, this belief was shared by the administrators of DRMC's neighboring hospitals. As the President of DuBois Hospital put it, "we were never going to be big enough to survive on our own unless we had a regional focus." Brookville Hospital sat 21 miles to the West of DuBois; Clearfield Hospital sat 20 miles to the East; and Elk Regional Hospital, in St. Mary's, PA, sat 32 miles to the North. They all were a half-hour's drive from each other; they were all in each other's back yards. "It was just the recognition," stated a Clearfield Hospital administrator, "that a competitive atmosphere between these institutions was not

going to serve well for either of the institutions itself, or for the communities or region as a whole, that we're trying to provide healthcare for."

Fueling the problems faced by each hospital was the migration of patients from the hospital's primary markets to out-of-area hospitals. "When we started moving down the road," [toward regionalization], remembered one DuBois physician with a deep institutional memory, "[we] realized in order to sustain and keep those services going, ...we have to work at controlling that market area, and keep these people locally."

As these were small town hospitals, administrators did not require access to their respective financial statements to know the financial conditions of neighboring institutions. Despite their common concerns, there was initial reluctance to actively collaborate because of a stronger mutual desire to remain independent. In 2007, the chance to move beyond concerns over independence and begin a dialogue on regional collaboration unexpectedly occurred when the Brookville Hospital administrator, with board support, called Mr. Graeca at DRMC seeking assistance.

Brookville Hospital

While DRMC's financial condition in 2008 was strong (See Exhibit 13A), its nearest competitor, Brookville Hospital, 20 miles to the West, was not (See Exhibit 13B). Brookville was experiencing a cash flow crunch that jeopardized its ability to meet obligations to vendors and employees. Anecdotally, some said Brookville had one-half day's cash on hand; another said it had, at any one time, up to six days. Decreasing patient volume was the immediate reason for the deteriorating financial situation (See Exhibit 11B). "Just to try to keep physicians, and to have to pay their salaries, you have to have a certain [patient] volume to support that," noted a Brookville administrator. "On the flip side," they continued, "it's not always about the money; it's also about quality, because if you can't do the volume of testing, etc., then you can't keep your quality. Is that really fair to the community," they asked? Poor quality leads to a weakened community perception, which can ripple through the community, undermining the hospital's

ability to succeed. These immediate troubles, coupled with an aging medical staff, and an inability to recruit new physicians, put Brookville in a very precarious position. Given the circumstances, the Brookville Hospital Board of Directors authorized a search for a partner. Neighboring hospitals in Punxsutawney and Clarion were not considered viable candidates because they, too, were similarly cash-strapped. The University of Pittsburgh Medical Center (UPMC) was both a choice and a threat. By this time, UPMC was growing rapidly in western Pennsylvania, yet it seemed, according to many, that UPMC's growth into neighboring communities did not always directly benefit the community. UPMC partnerships with rural community hospitals routinely resulted in significant restructuring of the community hospital, and in some instances, led to closure of the hospital's inpatient services. "We didn't think we'd be able to maintain the service we wanted for our community if UPMC came in," admitted one Brookville administrator. "They would have...maybe even shut us down." Brookville's ideal partner needed to be someone big enough to front some of their immediate financial needs, "but not so big," reflected a Brookville administrator, "like at UPMC, where they're going to come in and gobble us up."

As Brookville hospital leadership continued to explore possible partner candidates, one local institution, with the requisite characteristics and resources, moved to the top of the list. Over the years, Brookville administrators got to know DRMC management staff quite well; there were many "prior interactions," as one senior Brookville administrator put it, both professional and personal. DRMC was seen as a non-threatening neighbor with resources. Board approval to contact DRMC quickly followed.

In response to the Brookville Hospital request, DRMC President Ray Graeca put together what he called a "two-phase agreement." The first phase was a management agreement. DRMC assigned members of its management team to Brookville in order to, as Graeca put it, "get a handle on some of the good old-fashioned blocking and tackling that goes on in a hospital with collection and receivables." The arrangement was not a profit seeking one. DRMC asked only to be paid for costs. They were, as Graeca later remembered, "helping out a neighboring hospital." Graeca's thinking was that, if after a few years,

the Brookville Board liked their services, phase two could be the formation of a more integrated organizational relationship. The management agreement remained in place for 2 years from 2007 to 2009. During this time, DRMC provided immediate cash flow assistance, assumed financial responsibility for physicians employed by BH and supplied much needed management support. The infusion of DRMC support helped turn the hospital around. Graeca remembered: "They started to have positive cash flow, started to pay their bills on time, collecting their accounts receivables." Reflecting on the new relationship between Brookville and DuBois, one Brookville administrator admitted, it "seemed to be a perfect match for us; it still gave us kind of our own identity here, but at the same time we could benefit from the services they provided." The 2-year period was both a lifeline and a fundamental transition period for Brookville. "The employees," remembered one Brookville administrator, "were happy to have somebody that...could lead to stability." There was a "melding of cultures," as one would put it, and the integration was "well accepted and fairly easily done." It began with the sharing of management staff, but moved quickly into shared services such as information technology systems. In 2009 the two hospitals moved forward with phase two. Brookville hospital formally joined DRMC through the execution of a membership substitution agreement.[72] DRMC became the sole shareholder of Brookville Hospital, with Brookville becoming a subsidiary of DRMC. Brookville retained a separate board of directors (with advisory responsibilities), its own license and tax number, and its own medical staff.

Clearfield Hospital

Clearfield Hospital (CH) faced numerous interrelated challenges that resulted in an alarming downturn in its financial performance in the latter part of the first decade of the 2000s. The hospital was weathering the multiple outcomes associated with the changing healthcare environment: increasing competition within an already over-bedded local market, community concerns over the hospital's quality of care, outmigration of patient services to healthcare institutions in the State College, Pa., area, and the general depressive forces on business from a deepening economic downturn.

[72] A membership substitution agreement is the most common for hospital transactions and generally involves a nonprofit buyer and seller. These are often non-cash exchanges under which the larger hospital takes on the liabilities of the smaller hospital, and one of the parties becomes the corporate member of the other.

The underlying social, economic, and technological factors reshaping the healthcare environment, which appeared in steep decreases in inpatient volumes, shorter lengths of stay, reduced reimbursement from government and private insurers, dramatic increases in bad debt and uncompensated care, and a sustained shift toward outpatient procedures, did not bypass Clearfield Hospital (See Exhibits 11C and 13C). Clearfield Hospital's primary market also significantly overlapped the primary market of DRMC (See Exhibits 1A and 1C). The shared market, Clearfield County, is sparsely populated with pockets of social and economic hardship and a hospital bed/population ratio well above the Pennsylvania State average (See Exhibits 9 and 2C).[73] The Clearfield, 90-bed facility offered the full array of primary acute care hospital outpatient and inpatient services, and to a limited extent, certain secondary acute care services. But Clearfield Hospital services did not necessarily match up in either scope or intensity to those services offered by the much larger DRMC, 250-bed facility. In addition, impacting its ability to compete was the fact that Clearfield Hospital services were not favorably perceived by community residents (See Exhibit 12C). One focus of this concern was the negative public impression of its emergency room, something local administrators referred to later as "rough spots" with the ER. And "that's the doorway to get people in here," admitted a Clearfield administrator. Beyond headaches within its market, Clearfield Hospital was also confronting increasing outmigration of patients that negatively influenced their overall patient service volumes. With the completion of Interstate 99 connecting the Phillipsburg and Altoona areas with State College, many residents could now travel to Mount Nittany Medical Center in State College just as fast as they could to Clearfield Hospital in Clearfield. Anecdotally, some also thought the State College-Clearfield divide was subject to age, with people younger than 50 more likely to travel to State College for other services, including healthcare, and older residents, those more familiar and comfortable with local care, staying in Clearfield. And finally, the combined effect of all of these issues was only heightened by the start of an economic downturn in 2008. As the decade came to a close, it was becoming more apparent that with only 80,000 people in Clearfield County, and two sizable hospitals 30 minutes apart vying for same market share, that "both aren't going to survive," a Clearfield administrator put it

[73] Between 2008 and 2015, Clearfield lost $28 million, much of it in uncompensated care. Uncompensated care is healthcare services provided to patients who are either unable or unwilling to pay. Clearfield had $4.1 million in uncompensated care in 2014 alone.

simply. “It’s not enough population.”

As a new decade began, Clearfield Hospital acknowledged that a partnership of some kind with another hospital or system was needed. Clearfield developed goals to help guide its selection. A successful affiliation would achieve two goals: 1) increase Clearfield Hospital’s negotiating power with third parties; and 2) allow the hospital to retain local control of healthcare services. Clearfield had a long-standing relationship with DRMC, and recently collaborated with DRMC in the development of their cancer center and hospice services. It was well known that DRMC wanted to explore other ways to collaborate. Believing it could meet its two stated goals working with DRMC, Clearfield Hospital favorably responded to DRMC signals and entered into affiliation discussions in 2010. Clearfield Hospital’s selection was pragmatic. While DRMC was big, systems like UPMC were much larger. Similar to Brookville’s fears, Clearfield, too, felt that with larger organizations, they would be “immediately consumed,” thus losing any type of local control. “That was the primary driving force,” admitted a Clearfield physician. Joining forces with DRMC “wasn’t a golden opportunity,” the physician continued, “it was the least of all potential evils.”

The discussion between the two institutions took place over a period of 1 year. The initial approach explored was the execution of a membership substitution agreement redefining Clearfield hospital as a “department” of DMRC. However, Clearfield Hospital was unwilling to be another Brookville. Clearfield was adamant; they did not want to be a subsidiary of DRMC; they wanted equal footing. An alternative approach was then pursued that would be in line with Clearfield’s goals and maintain its status as an equal with DRMC. This solution was the creation of a holding company housing both DRMC and Clearfield Hospital. In the end, terms of the affiliation agreement executed in late 2011 between Clearfield Hospital and DRMC stipulated the formation of a corporate governance and management structure possessing certain reserved powers over DRMC, CH, and BH, the subsidiary of DRMC. To meet the requirement, a parent company, Penn Highlands Healthcare (PHH), was officially formed on

September 30, 2011 (See Exhibit 14). While the affiliation may not have been a golden opportunity, as earlier noted, a senior Clearfield Hospital administrator admitted, after the agreement was reached, "I personally feel that had we not done anything, the place [Clearfield Hospital] would be a vacant building."

The Four Corners Discussions

In 2012, shortly after Clearfield Hospital joined PHH, PHH began meeting on a biweekly basis with representatives from Altoona Regional Health System Hospital (Altoona), Conemaugh Health System (Johnstown) and Mt. Nittany Medical Center (State College) to explore the formation of a health system called The Four Corners (when plotted on a map, each hospital formed one corner of a square). A system of this nature would serve the residents of 20 counties in central and western Pennsylvania. A successful affiliation of these smaller systems would slow the growth of the two large health systems – UPMC and Geisinger – seeking to expand into this large geographic area. Board members were included at these meetings, along with medical staff, legal advisers and healthcare consultants. The discussions continued for approximately 1 year with little progress. Mt. Nittany Medical Center was the first to withdraw from the discussions. Soon thereafter, PHH voted not to proceed, but only after coming to terms with the essence of their original formation, namely, a "surviving niche independent entity." As one Board Member was remembered saying, "we didn't form Penn Highlands to flip it." They also realized that, if they joined a larger system, they might be required to discontinue clinical programs in which they took great pride, such as their cardiovascular surgery services. Most PHH representatives did not feel comfortable having someone else close their program. "We were going from Penn Highlands...being the dominant hub," Graeca remembered thinking, "to being the small one in The Four Corners. That didn't feel good."

In late fall 2012, as PHH prepared to limit its involvement in discussions, Altoona Regional Health System publicly announced the start of affiliation discussions with UPMC. This news was unsettling to PHH. Some PHH advisors and consultants painted a closing window on the opportunity to join Altoona

Regional Health System in an affiliation with UPMC. The PHH board went back and forth on a decision to call UPMC. But doing so would again go against everything they worked to build. The PHH board gathered one more time with consultants to review updated information, including newly completed PHH financial projections, in an effort to reach a final decision. The projections showed that the system could be financially successful in five years, but it would take a lot of hard work. Looking back, Graeca calls this a "period of discernment." They voted to stay independent, and to work on building the system they started. "We ought to give it a try," he remembered saying. "We owe it to ourselves and everybody." Soon thereafter PHH management returned to building the PHH system, which would soon include a fourth hospital: Elk Regional Health Center.

Elk Regional Health Center

Similar to the experiences of Brookville Hospital and Clearfield Hospital, Elk Regional Health Center's (ERHC) financial performance was uneven and trending negatively through the first decade of the 2000s (See Exhibit 13D). The causative factors were similar – decreased patient volumes and limited success with physician recruitment.[74] In addition, ERHC hastened its financial decline during this period by not adjusting staffing expenses to the lower levels of services in a timely way. To its credit, however, ERHC realized the importance of collaboration and did network with other healthcare associations and institutions to improve operations. During this decade, ERHC, eager to maximize efficiencies, decrease expenditures and retain its independence, joined the Pennsylvania Mountains Healthcare Alliance.[75] And from 2009 to 2012, ERHC maintained an affiliation with Hamot Medical Center in Erie, Pennsylvania, which, as part of the arrangement, provided ERHC with an array of needed clinical services.[76] In 2010, in

[74] Physician recruitment in rural areas is compounded by a few factors: rural medicine is not largely promoted in medical schools; rural communities tend to have a greater number of older adults, and geriatrics is not a popular specialty among young doctors in training; rural communities tend to have a larger percentage of adults in poverty, and payment from and reimbursement for these patients is often a challenge few physicians want to experience; the culture of medical students today has changed, whereas new and younger physicians want to have a more predictable schedule and would prefer working in group practices rather than being more isolated in independent practices once favored a generation or two ago; and lastly; rural communities, given the above characteristics, do not tend to offer young physicians (and their spouses/partners) the caliber of social and physical activities and experiences that they can find in more lively, urban contexts.

[75] The Pennsylvania Mountains Healthcare Alliance (PMHCA) is a shared service organization comprised of independent rural hospitals located primarily in western and central Pennsylvania.

[76] Hamot Medical Center is a 433-bed hospital in Erie, Pa., offering a full complement of inpatient and outpatient services, and serves as a regional referral hub and Level II Trauma Center. It is now a subsidiary of UPMC.

an effort to turn the hospital's fortunes around, ERHC entered into formal discussions with Hamot Medical Center seeking an arrangement that extended beyond management and clinical services contracting. In contrast to a merger agreement or management contract, ERHC favored an agreement that would allow for continued local control of operations. Such an agreement was scheduled for 2011. The discussions, however, came to an abrupt halt when Hamot Medical Center elected to merge with the University of Pittsburgh Medical Center (UPMC) on January 21, 2011. The newly formed UPMC Hamot withdrew the initial agreement, and in place, began to discuss a relationship with ERHC that employed "uplink" and "downlink" as key operating terms. ERHC was not interested. EHRC did not believe there was a cultural fit with the new entity and had long been dissatisfied with the pricing of existing services provided by UPMC Hamot.

Still in need of a partner, ERHC looked closer to home. ERHC was positively inclined to open discussions with PHH based on its past associations with DRMC leadership and affirmative conversations with Clearfield Hospital representatives. But, there were also more immediate reasons to communicate. "There was a lot of commonality there," reported one ERHC board member about its relationship with PHH and its administration. "We knew what Ray Graeca was about," he continued. "We knew what the administration was about – we have people here working in DuBois. People in DuBois working here." The attraction for the ERHC board was the structure of the affiliation spearheaded by Mr. Graeca. ERHC, like Brookville and Clearfield before them, feared the size, strength and influence of large regional health systems like UPMC. Similar to Clearfield and Brookville, their primary objective was to maintain local control. The PHH structure potentially allowed for this arrangement. To be sure ERHC board members sought out the opinions of friends who served as members of the Clearfield Hospital board. They talked to each other about Clearfield's affiliation with Penn Highlands Healthcare. For the most part responses from Clearfield Hospital representatives were reassuring.

There, however, was one exceptional distinction between the relationship of ERHC with PHH and those

hospitals already part of the developing system. ERHC was the only hospital directly impacted by a PHH satellite medical facility placed in their community in 2012. Hoping to stem the flow of St. Mary's patients in need of specialized services to large regional health system centers in Erie, Danville or Pittsburgh, PHH, as one senior administrator stated "put together a $5 million outpatient enterprise and plunked it right in front of Walmart...the most heavily traveled street in the county [Elk], to let people know that we weren't going away, and we were going to bring our services a lot closer." This investment followed closely behind a PHH Q-Care walk-in clinic opened inside Walmart earlier that same year. While the structure of the affiliation agreement was important, the real "tipping point," as one Elk administrator surmised, was a competitive building being built by PHH in front of Walmart, not too far from the hospital. "Nothing like getting the attention of everyone involved when you put the competition up the road," remarked an ERHC administrator. "You are acutely aware that it's either fight or fuse." The proximity of the satellite facility, ERHC hospital's weakening profit-and-loss statement, and the warm relations between boards, was enough to encourage ERHC to find a partner in PHH. On July 1, 2013, PHH took a step toward regional consolidation with approval of an affiliation agreement between PHH and the Elk Regional Health Center. And, with that affiliation, the organizational structure of PHH was set (See Exhibit B-10).

The Development of Penn Highlands Healthcare: From Four Hospitals to One System

The development and growth of PHH over its 5 years of operation is best documented as a two-phase process. Phase one represents the period from 2011 to 2013. This period is characterized by rapid growth and initial steps at integration. Phase Two represents the period 2014 through 2016. This is a period of increasing organizational maturation reflected in the development of a more robust corporate management structure and service line reporting scheme; the creation of a formalized strategic plan linked to a well-articulated mission; and, the implementation of a series of strategic actions to address immediate concerns as well as position the organization to succeed in the long-term.

Phase One (2011-2013)

During the period immediately following the formation of PHH, the corporate staff consisted of Mr. Graeca and one administrative support person. In this period, lasting less than 2 full years, two new hospital partners, CH and ERHC, joined PHH. The group of physicians within the Penn Highlands Physician Network (PHPN) increased dramatically as employed physicians from CH and ERHC were folded into the group (See Exhibit B-6), and affiliation discussions with other regional health systems were conducted and concluded. PHH staffing was purposely lean to minimize operating expenses. A Board of Directors comprised of members of all four participating hospitals governed the newly formed organization. At the time, those involved believed a new way of organizing and providing health services envisioned in a fully developed PHH would greatly benefit all those residing in the region. From an organizational perspective, PHH planned to pursue a hub-and-spoke service delivery model to increase access, improve quality and realize operational efficiencies. In this conceptualization, DRMC would serve as the hub health institution of the merged service areas. BH, CH, and ERHC located throughout the newly combined market would serve as the spokes of the hub.[77] The sustainability of the individual institutions and success of the system as a whole would therefore depend on consistently providing the appropriate level of care at a high level of quality in a cost effective manner. It was expected the growing PHH medical group would significantly enhance this effort at system transition.

Of course, turning this concept into a reality was another thing completely. At its inception the focus of PHH management was divided between ongoing discussions with other regional health systems and efforts to develop PHH. Upon reflection, PHH CEO Graeca acknowledged the impact of the discussions on PHH development. “We were so distracted with the Four Corners and preparing for meetings,” he admitted, “that we didn’t get about the business of really starting to do things in a system fashion.” In effect, the Four Corners discussions delayed PHH from addressing early operational concerns. More

[77] In a hub and spoke service delivery model, the role of the spokes is to manage emergent and primary outpatient care and primary and secondary inpatient care for those most proximate to their facilities. The hub then serves those patients requiring more intensive, advanced or specialized care. Broadly speaking, the intent of the model is to generate measurable value to the community by providing the correct care needed by health system patients “in the right place at the right time.”

specifically, PHH, at the start, did not have the human resources, a coordinated communication plan across multiple channels or an operational transition plan in place to efficiently or effectively implement organizational change. Once the smaller institutions became part of a larger health system, the challenge for each institution's leadership was to manage expectations and limit uncertainty, both within the organization and throughout the community. What is the vision for the hospital? What is the end game or goal of this new healthcare arrangement? Answers to these questions needed to be developed, tailored and communicated to their respective audiences. Early on these answers were not always effectively communicated to each of the stakeholder groups.

The lack of a well-documented transition plan or process was, arguably, the most critical issue facing PHH and served to compound problems for CH and ERHC. Without a playbook, or without someone in a position on a full-time basis to facilitate these kinds of transitions, change would be slow and not always well structured. For example, four years after joining with Penn Highlands, there is still no Penn Highlands Clearfield signage. "When you think about branding," asked a Clearfield senior administrator, "are we seen as Penn Highlands, or are we just not yet?" These missteps promote confusion and provide space for rumors and misinformation to grow. According to this administrator, these missteps could have been prevented if there was a template, a "system" in place.

These same concerns were echoed by ERHC administrators. What fuels questions and mistrust within the community is when change is slow and jagged, which often gives the impression that there is no clear direction or leadership guiding the transition, and that the result will be less than favorable. "There should be a corporate structure already in place, an integration and project manager in place from day one, and have a timeline playbook all laid out," argued an ERHC administrator. "If you do the things upfront, on the proper timeline, it happens in a sequence that is hard for the community to absorb initially," they continued, "but it's over and then you can say we're done."

Not surprisingly, early stumbles in transition led to some discontent and pushback from both the Clearfield and St. Mary's communities. At Clearfield Hospital, early efforts to realign services within the system resulted in the discontinuation of obstetric services at CH in 2012. The Clearfield newspaper reported lost services were due to "[concerns about] the clinical and financial viability of operating these services with low patient volumes, reduced reimbursements and limited physician resources."[78] "That change is hard," said a Clearfield board member, and long-time community resident. "They don't want to hear it; they want it [the hospital] to stay the same way it had been for years and years and years." Indeed, Clearfield experienced significant community pushback after the affiliation agreement was made public. "The community feels that DuBois came in and swept us up," explained a board member. "It's their [DuBois] way or the highway." Similar to CH, ERHC encountered problems in regard to the affiliation with PHH in 2013 within its hospital and throughout the community. Some ERHC physicians were opposed to the arrangement and began to spread their opinions among their patients. There was considerable community pushback partially resulting from expressed physician concerns. Community meetings were held to publicly express concern and opposition to the hospital's action. Opponents also showed up in numbers at the hospital's annual public meeting. For this meeting, the ERHC president and board members developed informational items and presentation materials for attendees, but to no avail. Indeed, ERHC has a history of community distrust. In the 1970s, under different circumstances, public outcry forced the removal of the entire Board of Directors at the hospital, so resistance is rooted here. The older generations who lived and worked within the legacy model of healthcare find it hard to understand and accept the changes affecting healthcare today.[79] "You can share the financials, share the good changes you're making, your quality results, share all of that information," protested an ERHC administrator, "and at the end of the day, that is not acceptable; that is not what they want." "We actually met with two of the

[78] Penn Highlands Clearfield Responds to Concerned Citizens Meeting, Gant News, Friday, June 5, 2015.
[79] Until the advent of prospective payment systems in the U.S. in the early 1980s, hospitals were paid by Medicare and other payers on the basis of reasonable costs. Medicare actually paid in excess of costs ("cost-plus") because a percentage of capital costs were factored with operating costs into a formula used to compute a per diem reimbursement rate. Cost-based reimbursement is a form of retrospective reimbursement – the amount to be paid to the provider is determined after the service is rendered. Prospective payment methods determine the amount to be paid to the provider before the service is rendered. Diagnosis-Related Groups were introduced in 1983 as the method succeeding cost-based reimbursement to pay hospitals for Medicare inpatients in the U.S. In contrast to the era of cost-based reimbursement, today's health care institutions, especially hospitals, must efficiently operate or risk closure.

people," the administrator continued, "and answered every question there was, explained the complexities of it, and there was absolutely no way they would accept any of our answers." To some extent, the St. Mary's community is gun shy. Over a 30-year period, they have seen locally owned, successful manufacturing companies transition into conglomerates with international owners, often resulting in significant job loss and restructuring.

In both hospital transitions, the one thing each hospital tried to ensure – continued local control of health services – seemed to be slipping away in the view of some community members in each setting. PHH leadership, along with senior administrators at each hospital, worked tirelessly to reassure key constituents that this was not the case. In addition to better ongoing efforts to communicate with those affected by the changes in hospital affiliations, PHH leadership turned inward and instituted practices to improve the dissemination of PHH culture throughout the new system; further develop strategic direction; and enhance system communication.

First, to reinforce PHH beliefs and values throughout all of the system's institutions, PHH initiated a "farm-league-type" system requiring all newly appointed hospital presidents to first serve as the President of Brookville Hospital, the first and most closely associated institution to DRMC. Here they were educated and trained on system policy and procedures, familiarizing themselves both professionally and personally with the network of relationships and resources available as a result of the consolidation. This training proved invaluable by providing leaders with a better understanding of how to resolve intra- and inter-institutional conflict and accomplish operational and strategic objectives. Secondly, to provide senior leadership with strategic guides for each institution and the system overall, the strategic planning committee of the PHH Board of Directors was tasked with creating a development plan for a hub and spoke regional rural health system.

Finally, the President's Council, a biweekly meeting of the four hospital presidents, was established. The

President's Council filled a need for the timely dissemination of information across institutions, one that had previously gone unmet resulting in confusion and miscommunication. For example, DRMC had a human resource payment policy, a bonus pay program for nurses working on weekends, and nurses working weekends at ERHC were not aware of these benefits, but soon found out through word-of-mouth. For a health system, these issues and challenges can weaken employee trust and moral. Although all of the actions summarized above were beneficial, it became clear by 2013 that PHH would need to substantially invest in greater system-level resources and capacity to realize its vision of an independent regional health system.

Phase Two (2014-2016)

The ramping up of PHH resources may be traced to the recruitment and successful hire of a PHH Chief Operating Officer, Mr. Steven Fontaine, in 2014. This hire was followed by a series of PHH senior management appointments between 2011 and 2016 (See Table 5 and Exhibit B-11).

Table 5: PHH Senior Management Team

Penn Highlands Healthcare Executive	**Joined Penn Highlands Healthcare**	**Previous Affiliation**
Steve Fontaine, CEO	2014	None
Dave McConnell, CFO	2012	CEO of Clearfield Hospital
Mark Norman, COO	2016	None
Gary DuGan, MD, CMO	2014	CMO of the DuBois Regional Medical Center
Greg Bauer, Business Development Officer	2013	CEO of Elk Regional Health Center
Raymond Graeca, CEO (retired June 2016)	2011	CEO of the DuBois Regional Medical Center

As Mr. Fontaine joined PHH in 2014, a second strategic planning process was initiated under the direction of Mr. Graeca and Mr. Fontaine for implementation in calendar years 2015 and 2016. The management teams of the four hospitals and PHH actively participated in the process. The PHH parent board approved the overall plan on November 3, 2014. The detailed plan created the needed bridge between the PHH mission *to secure, enhance and expand quality healthcare services* and the environment in which it operated. The plan for the entire system was matrix driven, specifically focused and outcome measureable. The plan consisted of 117 total initiatives organized around seven pillars, specifying how the plan was to be carried out within each institution and the physician network.[80] The strategic plan was ambitious. The effort, though, was now supported by an appropriately sized senior corporate management staff, a more developed and efficient governance structure,[81] and by mid-2016, a cadre of service line directors.[82]

Finally, although the majority of strategic initiatives were aimed at system consolidation and operational effectiveness and efficiency improvement, the PHH board, through Ray Graeca, shared several key plan initiatives with the public to reinforce the tangible benefits to the community of successful plan completion. Among these were the recruitment of additional physician and advanced practice providers; the addition of six new primary care/Q-Care sites throughout the service area; and improvement of patient emergency room experience at all four hospitals. Efforts to complete plan initiatives started in 2014 with several well underway before year's end.

[80] The seven pillars included: financial; quality/ patient safety; human resources; service line development; medical staff development; business development; and, Penn Highlands Healthcare 2020.

[81] Each hospital still maintains a board of directors. The PHH board of directors is made up of three representatives from Elk, four from Clearfield, and eight from DRMC (includes representation from Brookville). In addition, 25 percent of the PHH board members are physicians. Any board decision at the hospital level has to be approved at the PHH board level. The PHH Board of Directors establish short and long-term strategic goals for the system, and the hospital presidents take these goals back to their respective boards and work to match system goals with local initiatives. Likewise, local needs are identified and communicated back to the PHH in hopes that the system's size and power can be used to leverage resources to solve local problems.

[82] In addition to three existing service lines (laboratory, cardiology, and home health) PHH in May, 2016 announced the appointment of eight additional service line directors the responsible for the management of clinical operations and implementation of strategic initiatives for their respective services across all four hospitals. The services include radiology/oncology, emergency, anesthesia, case management, rehabilitation therapy, pharmacy, behavioral health, and surgical.

Discussion: Community Health Outcomes and Impacts

Based on a thorough review of PHH's history and current state of affairs, progress was made to address many of the pressing concerns that spurred the alliance of four community hospitals into one health system. A conclusive assessment of the system's success, however, requires an examination of achievement in four separate but related goals: First, did the alliances result in increased rural community healthcare capacity and positive changes in community's health status? Second, were investments made to increase healthcare capacity based on a documented community need? Third, are new methods of healthcare delivery in line with recommended rural health practices? And fourth, did the alliances improve quality, service efficiency, and accessibility?

Goal #1

Before implementing strategies to increase healthcare capacity, it was essential for PHH to restructure the newly formed health system in ways that aligned existing healthcare resources with changing community healthcare needs and demands while at the same time placing the four hospital network on sounder financial footing. Experiencing declining inpatient volumes while simultaneously realizing increases in ambulatory care needs, PHH restructured the four hospital system into an integrated hub-and-spoke service delivery model. Within the now newly formed network, patient flow progresses through primary, secondary and tertiary care settings. DRMC serves as the hub with lead responsibility for providing secondary and tertiary inpatient care services. The three remaining community hospitals continue to provide primary inpatient care and post acute inpatient care. In addition, the three hospitals focus more intently on services provided in the outpatient setting where costs can be reduced, access can be increased and preventative and post-acute care can be administered in a more efficient manner.

The restructuring process created opportunities to improve both the financial performance of each of the hospitals, and the system overall, through the implementation of a series of interrelated strategic actions. These actions may be broadly categorized as either revenue enhancement or expense reduction strategies.

Revenue enhancement strategies used by PHH included renegotiation of private insurance contracts, redesignation of hospital resources, and more effective use of federally designated special entities already in place within PHH. To begin, being part of a larger system aids smaller hospitals in their ability to negotiate insurance contracts. Once a hospital with $25 million in annual revenue, BH is now part of a system with approximately $500 million in annual revenue. BH benefits from this size when negotiating with insurers.

PHH also redesignated existing hospital assets to enhance revenue in at least two instances. The first example was the establishment of a "swing bed" designation for underused acute care beds at BH.[83] With traditional inpatient volumes down, BH now uses these "swing beds" as a step-down unit for BH and DRMC patients discharged from acute care services but not yet ready to return home. According to BH administration, this program has experienced appreciable volume growth. The second example, and by far most significant, was the redesignation of ERHC as a Critical Access Hospital (CAH) in 2015.[84] The new designation offered an opportunity to stabilize and improve ERHC's fiscal health by potentially increasing annual reimbursement by $2 million. "The value of being part of the system," explained an EHRC Board member, "is our PHH COO had experience with CAH and knew there were avenues that we could take. As a result of being part of PHH, we were able to do something that significantly benefitted EHRC because somebody in our system had that experience and expertise."

In addition to redesignating health system assets, PHH better utilized special healthcare designations

[83] The Medicare swing bed program allows hospitals with 100 beds or fewer to provide both acute care treatment and skilled nursing treatment to patients without having to physically move the patient to another bed. The hospital receives reimbursement for skilled nursing treatment, simply by discharging patients from acute care beds and admitting them to skilled nursing beds when the patient meets the coverage guidelines for skilled care. The skilled nursing bed is sometimes referred to as a "swing" bed, because the hospital swings a bed from an acute care designation to a skilled nursing designation. Patients must be in the medically necessary acute care bed for at least 72 hours before they can be discharged to a swing bed. *Critical Access Hospital Finance 101 NRHRC p14.*

[84] A Critical Access Hospital (CAH) is a hospital certified under a set of Medicare Conditions of Participation (CoP), which are structured differently than the acute care hospital CoP. Some of the requirements for CAH certification include having no more than 25 inpatient beds; maintaining an annual average length of stay of no more than 96 hours for acute inpatient care; offering 24-hour, 7-day-a-week emergency care; and being located in a rural area, at least 35 miles drive away from any other hospital or CAH (fewer in some circumstances). The limited size and short stay length allowed to CAHs encourage a focus on providing care for common conditions and outpatient care, while referring other conditions to larger hospitals. Certification allows CAH to receive cost-based reimbursement from Medicare, instead of standard fixed reimbursement rates. There are 1,326 hospitals across the nation with a CAH designation. Including Elk, Pennsylvania now has 14. Penn Highlands Brookville became a CAH in 2006. *Vital Lines*, April, 7, 2015; Vol 1: No. 9.

already in place within PHH on at least two occasions. In the first case, PHH established a primary care practice and purposely designated it as a rural health clinic in an effort to expand services within Clearfield Hospital's primary service area. PHH relied on the ability of BH as a CAH to receive this designation for the new practice. Payment for services provided to Medicare and Medical Assistance patients are enhanced as a result of the new primary care site's designation.[85] The second example has had far reaching consequences for PHH, allowing the system to grow its physician practice, without experiencing the significant operating losses (especially during start-up) routinely encountered with health system employed physician practices. DRMC participation in the 340B drug-pricing program created the opportunity (See Exhibit 9). PHH's decision to employ all PHH physicians within this program maximized the benefit offered in this program.

PHH expense reduction strategies were in line with standard approaches but nonetheless required difficult decisions on occasion. The first strategies implemented included taking advantage of economies of scale and consolidating positions when opportunities were present. What followed were the difficult decisions involving forced reductions necessary to counterbalance steep drops in service volumes across the system.

Further, the impact of consolidation created a one-time chance to reduce expenses through contract renegotiation on supplies, equipment, drugs, and other items such as consulting services. For the period 2012-2015, PHH documented $2.4 million in expense reductions for supplies alone as a result of the system's increased bargaining power. PHH also began to address human resource expenses by consolidating positions when it made sense. For example, when the Director of Accounting at BH

[85] The primary benefit of rural health clinic (RHC) status is enhanced reimbursement from Medicare and Medicaid. Medicare reimburses RHCs based on allowable and reasonable costs. There are two types of RHCs: independent RHCs and provider based RHCs. Provider based RHCs work as a department of another provider, such as a CAH, providing healthcare services to the same population. Provider based RHCs are not subject to a payment cap if the parent entity is a hospital with fewer than 50 available acute care beds (not licensed beds). Provider based RHCs are reported on the main provider's cost report as a department of that provider. As a result, overhead is allocated to the RHC through the step-down overhead allocation process in the same manner that impacts all of the provider's patient care service departments. *Critical Access Hospital Finance 101 NRHRC p 8.*

resigned, PHH eliminated the BH director position and reassigned the responsibilities of the BH director to a member of the PHH financial staff as a step in a more deliberate strategy to consolidate financial statement preparation for all four hospitals at the corporate level of the organization. Finally, dramatic declines in patient activity across the four hospital system (See Exhibits 11 A, B, C, D) required PHH to make difficult force reduction decisions in spring, 2015.[86]

The combined results of PHH revenue and expense strategies soon became evident. PHH losses in fiscal year FY 2013 were $16 million dollars, but by fiscal year FY 2015, losses had been reduced to a $2.4 million dollars (See Exhibit 13 A, B, C, D). Projections for FY 2016 called for a $2 million-dollar surplus.

PHH disciplined financial management was not lost on the financial institutions in the community. For PHH, June 26, 2014 marked a turning point for the system. On this day, a syndicate of eight banks agreed to loan PHH $100 million, $70 million of which was used to refinance old debt (saving $5.5 million over 5 years), $10 million was a line of credit used to extinguish other lines of credit, and the remaining balance was new money. One year later, those same eight banks voiced their willingness to provide PHH with additional financing, if it wanted it.

With restructuring well underway and efforts to stabilize PHH's financial condition meeting with success, the system pursued targeted increases in healthcare capacity. In 2015 PHH opened three new medical office buildings. These buildings typically house primary care and urgent care services, ambulatory diagnostic services, varying levels of specialty care, and, in one instance, an outpatient pharmacy. The buildings are strategically located throughout the PHH service area and include the DuBois Community Medical Building, the Moshannon Valley Community Medical Building and the Punxsutawney

[86] Clearfield Hospital: elimination of 30 positions; hour reduction 50 positions; 11 positions unfilled. ERHC: elimination of 28 positions; hour reduction 25 positions; 15 positions remain unfilled. Brookville: elimination of 15 positions; hour reduction 9 positions; 11 positions remain unfilled. DRMC: elimination of 33 positions; hour reduction 13 positions; 90 positions remain unfilled.

Community Medical Building. PHH's specific goal was to increase access, especially to primary healthcare, by strengthening the spokes of its hub-and-spoke delivery model. A critical component of the PHH strategy to expand healthcare availability within the structure of the delivery model, are the Q-Care Urgent Care Centers. As of 2015, PHH had established six Q-Care Centers. Three of these centers opened in 2015 as the new office buildings came on line. According to PHH administrators, Q-Care Urgent Care Centers create access points. And for those patients who do not identify with a primary care physician, these points of access are pivotal moments where staff can make follow-up appointments within the hub-and-spoke system, creating a new patient, providing quality care, and generating additional revenue. PHH is also exploring innovative ways for patients to access healthcare services. For example, at the Moshannon Valley Medical Building, PHH is working on a docking area to provide mobile healthcare services in the future.

With the purposeful intent of strengthening secondary and tertiary care services, PHH also moved forward on providing access to more advanced healthcare services. Responding to both the need for emergency care for possible stroke patients, and to the reality that in rural communities a neurologist may not be readily available, DRMC established a telemedicine program and is now a certified stroke center. DRMC has a tele-stroke relationship with the Cleveland Clinic. Patients with stroke symptoms are immediately linked to a neurologist via the computer to assess their condition. The medical staff on location is trained to follow steps prescribed by the specialist and to do so in a timely manner. Further, in 2015, PHH opened a Surgery Center at DRMC. The center is a multi-specialty surgery center designed to perform same-day surgeries for outpatients.

Finally as in the other studies, evaluation of the impact on community health status as a result of changes in healthcare capacity cannot be made at this time given the brief time the merger has been in existence and the complexity of isolating with confidence those healthcare capacity factors directly influencing community health status.

Goal #2

Based on the most current community health needs assessments, the top five identified community needs common across the primary service areas of each of the four hospitals included: drug and alcohol services, nutrition and wellness, access to care, need for more free clinics, and navigation/coordination. In response, PHH created an implementation plan as a first step toward addressing the recognized health needs of its service area. “Since most of us have the same issues,” explained one hospital president, “If we do things together, jointly, we can have more of an impact.” PHH subsequently made efforts to address each of these areas by strengthening existing programs, adding new services, or developing new system wide policies. While a comprehensive overview of all PHH efforts across these areas is not feasible, a sampling of efforts in these areas is provided below.

An example of PHH’s commitment to address drug and alcohol issues is its collaboration with the Clearfield-Jefferson Drug & Alcohol Commission (CJDAC). Both PHH and CJDAC, as well as other community organizations, applied and were awarded a Rural Opioid Overdose Reversal (ROOR) grant from the U.S. Health Resources and Services Administration (HRSA). Training to administer naloxone for opioid overdoses is currently available to first responders through PHH. To date over 90 first responders have completed the training.

PHH, through its hospitals, also offers a wide array of health and wellness programs. Clearfield Hospital supports a number of outreach programs, among them are nutritional educational sessions by an employed clinical dietician, smoking sensation programs, and the Strong Women program run in cooperation with Penn State Extension. This program teaches men and women proper strength-building techniques, appreciation for regular physical activity, and proper nutrition. Likewise, with support from the Elk County Commissioners, ERHC sponsors The Walking Life Program. The program encourages students and faculty to make healthy lifestyle changes like: exercising, drinking water, eating healthy and saying “no” to drugs and alcohol. The Chief Nursing Officer and a rehab Physical Therapist visit all the

high schools to present educational information. A point system has been structured to measure how well each person, classroom and school district does. At the conclusion of the school year, points are tabulated and winners are recognized. "We've taken a stance that we should be weaving ourselves into the healthcare of this community," explained ERHC President, "so that if the community thinks about its health, we come to mind first."

Access to primary care was measurably improved with PHH opening of three medical buildings; establishment of six urgent care centers; and the startup of a rural health center in the Penn Highlands Clearfield service area.

Finally, PHH did not directly respond to the need for "free clinics," but it did take a step toward reducing the financial barrier to healthcare services. On June 1, 2016, PHH implemented a policy and system-wide standardized program that provides discounts on emergent or medically necessary hospital/physician care to those who qualify and apply to the program. The new policy ensures that patients receive quality services from their healthcare provider regardless of their ability to pay.

Goal #3

PHH's current hub-and-spoke service design represents its most noteworthy effort to engage in recommended rural health practices. PHH's addition of physician specialists and recommended telemedicine services[87], its repurposing of Brookville, Clearfield and Elk Hospitals, and its extension of primary care entry points into the health system through the establishment of medical office buildings, primary care practice and urgent care sites have created an orderly, efficient and high quality approach to caring for patients residing in rural communities.[88]

[87] Telehealth Use in Rural Healthcare". Rural Health Information Hub. Retrieved from https://www.ruralhealthinfo.org/topics/telehealth March, 2017.
[88] http://www.schumacherclinical.com/health-care-insights/2015/3/rural-hospitals-future-depends-on-hub-and-spoke-models; Accessed on May 5, 2017.

Goal #4

PHH has improved healthcare quality, service efficiency, and access for its patients. Historically, clinical quality and the quality of the patient experience across the four hospitals (with one exception), equaled or surpassed Pennsylvania hospital averages (See Exhibit 12 A, B, C, D). PHH looked to build on this tradition and recommitted to service quality. According to the Quality Program Director for PHH, physicians and staff committed to several quality initiatives including process improvement projects, professional development through education, use of electronic health records, and patient outreach and education. These efforts began to pay off. At Clearfield Hospital, for example, clinical performance in every area has steadily improved. Further, research collected by ERHC shows a significant improvement in patient satisfaction scores over time. External organizations have taken notice of PHH efforts. Table 6 provides several examples of quality excellence across PHH entities.

Table 6: Quality Recognition

1. Designation of The Heart Center of Penn Highlands DuBois as a Blue Distinction Center+ in the Blue Distinction Centers for Cardiac Care Program by Highmark BCBS
2. Designation of the Maternal and Child Centers of Penn highlands DuBois and Elk as Blue Distinction Centers + for Maternity Care designation
3. Presentation of the "Safety Across the Board" Excellence Award to Penn Highlands DuBois, Brookville and Elk by the Pennsylvania Hospital Engagement Network
4. Receipt of the Get with The Guidelines Stroke Silver Plus Quality Achievement Award presented by the American Heart Association/American Stroke Association
5. Recognition by Hospital Strength Index of Penn Highlands Brookville and Elk for superior overall outcomes (safety, readmission, mortality)
6. Penn Highlands DuBois has been named one of three platinum winners, the highest level of recognition, by VHA Mid-Atlantic for extraordinary achievement of clinical quality and patient safety among healthcare organizations in New York, New Jersey and Pennsylvania.
7. Receipt of Four-Star Quality Rating by Penn Highlands Physician Offices by Highmark BCBS

Operating efficiencies have also been realized through changes in organizational structure, creation of organizational incentives, and the development of management processes to monitor and improve performance.

From an organizational perspective, a significant change brought into play in 2016 to support the hub-and-spoke delivery model was the "management oversight system." This system was a reorganization of PHH service line management. The PHH administration, working alongside the four hospital presidents, appointed a PHH service line director for all of the major service lines across the system.[89] Each PHH service line director is responsible to develop the strategic vision, manage the operations, and explore new opportunities for his or her service line. "By reorganizing along service line designations," wrote system CEO Graeca in *Vital Lines* in January of 2016, "I believe we can achieve greater coordination and efficiencies for Penn Highlands Healthcare moving forward."[90] In addition to the restructuring of service line management, PHH also reorganized the physician group practice by service line to improve care coordination and maximize efficiencies. By actively managing the distribution of physician services by service line, PHH plans to capitalize on the hub-and-spoke model. "Regardless of when it is," one hospital president claimed, "nights, weekends, or whatever, we have the ability to have that specialty care 24/7 available." The benefit for both the system and the patient comes with practice – a busier specialist will become a better and safer specialist, thus putting patients at less risk. "In the end," explained a senior PHH administrator, "you are doing it safely, you are providing better care for people within your community." One other way PHH is currently working to create system efficiencies, and as a byproduct, cost savings, is through consolidation of management support services. It is expected that, over time, many of these functions will be consolidated at the corporate level of organization.

Organizational structure creates the framework in which to operate, but it is the creation and management of organizational policy and procedures, with assigned accountability and stated incentives and penalties, that influence behavior to meet mission goals. As an example, PHH developed efficient and effective management processes within PHH physician practices, and as part of this effort, created performance

[89] The service lines include: Anesthesia (Certified Registered Nurse Anesthetists), Behavioral Health Case Management, Emergency Services, Home Health/Hospice, Pharmacy, Radiology/Oncology, Rehabilitation Services (PT/OT/Speech and both inpatient and outpatient rehab), Surgical Services (OR/Sterile/Recovery/Pain/Wound Care), Laboratory, and Cardiology Services.
[90] The newsletter, which started in late 2014, is a "to-be-published-as-needed, electronic news bulletin for employees, medical staff, board of directors, auxiliary members and volunteers of Penn Highlands Healthcare and its affiliated organizations." As a communicative tool, its primary function is to be the primary source of system news and information for system workers, thus decreasing, but not fully eliminating, misinformation.

expectations and goals tied to compensation models for PHH physicians. Led by the system's Chief Medical Officer (CMO), Dr. James Devlin, M.D., still a practicing physician, the practice management initiative may be one of the most important system enabled practices at the heart of the Penn Highlands story. "There are three things you have to be able to do," he said simply. "You have to provide quality, you have to provide access, and you have to make money doing it." Patient access is both a local and nation-wide problem. According to the PHH CMO, inefficient practices markedly decrease patient access. Thus, increased efficiency will lead to increased access, and if you increase access, you increase revenue. The challenge is rooted in the fact that not all practices are alike. Solutions, then, are more tailor made. The PHH CMO not only figures out what the problems are, he also helps them realize how to solve the problem in ways that last by putting into place appropriate policies and procedures.

One of the solutions to improved physician practice efficiency that the PHH administration has found is a compensation-based incentive program, one that is linked to practices on a competitive basis. "The only way to influence physicians' behavior," explained a PHH senior administrator, "is to supply them with data that they can react to." And when these data are posted publicly in the doctor's lounge, or sent out via electronic mail, physician performance can be altered. When tied to a compensation model, if expectations of performance are met or exceeded, physicians are rewarded financially.

A second example of an incentive-based practice management solution in hospital settings involved addressing an issue concerning the completion of inpatient medical charts. Within the PHH hospitals, there were a significant number of physicians failing to complete their patient's charts. No chart, no payment. Further, without a chart, specialists did not have access to patient records. With hundreds of incomplete charts, the PHH administration initiated an incentive system with a financial penalty to encourage physicians to complete charts. Within a few months, there were only three physicians who had substantial delinquencies.

Finally, PHH has instituted management processes to address operational challenges, not only on a retroactive basis, but also in real time. Within the five entities that make up PHH, four hospitals and one physician network, a total of 117 strategic initiatives were included in the 2015-2016 strategic plan. One of these initiatives was the development of key volume indicators (KVIs). KVIs help physician practices or medical departments, for example, keep the appropriate amount of staff/labor on the schedule and on the floor given specific patient volumes and future projections. A PHH administrator, with primary responsibility for this initiative, visited with directors at each hospital over the course of seven months, analyzing operations and helping to establish guidelines. The use of this management tool has resulted in significant savings.

Finally, as stated under preceding goals, PHH succeeded in increasing accessibility to care through the establishment of varying freestanding ambulatory care sites. This expansion required an effective physician recruitment strategy. As ways to build system capacity, PHH grew the Penn Highlands Physician Network (PHPN), entered into partnership and contract agreements with independent physician organization, and explored the possibility of establishing a graduate medical education program. While the difficulties of recruiting a physician to a rural hospital are well documented, it was made clear a number of times that finding physicians to join a four-hospital health system where the majority of physicians are employed by a network, and not independent practitioners, was less difficult. “We’ve had recruitment successes,” said the president of ERHC. “I don’t think we would have had these successes if we weren’t recruiting into such a large physician group. That has created, from the physicians I’ve talked with, a sense of security.” The BH president witnessed a different benefit. “I think it just helped us attract some better physicians,” she admitted. This President saw improvements in quality of care in her emergency room, as well as improved customer service ratings. She equated these improvements to the “positive influence on quality” that these physicians brought with them, particularly, the “knowledge transfer” that occurs when experience and ideas are added to the mix. In the first several years of operation, PHH successfully recruited heart surgeons, pediatricians, family practitioners, internists,

emergency medicine doctors, hospitalists, and a gastroenterologist. To bolster physician recruitment efforts, PHH also entered into a partnership arrangement with University Orthopedics Center (UOC) of State College, PA to increase surgical service capacity at DRMC, and contracted with Synergy Surgicalists of Bozeman Montana to provide additional on-call surgical support for the DMRC emergency room. Finally, as part of a long-range recruitment strategy, PHHS began working with the Lake Erie College of Osteopathic Medicine to establish a Graduate Medical Education Program, with residency programs in internal medicine, family practice, emergency medicine and surgery.

Closing Remarks & Lessons Learned

Four west central community hospitals came together over a period of 7 years and formed an alliance to address a series of related challenges facing each of them. These challenges included decreasing patient volumes, particularly for inpatient services, decreasing levels of reimbursement, increasing rates of bad debt expense and uncompensated care, physician recruitment challenges, increasing regulatory requirements, and the threat of intensified competition within a rapidly changing industry environment. Today, PHH continues forward as a health system comprised of four hospitals, four home health agencies, two cancer treatment centers, two surgical centers, seven walk-in urgent care centers, one long-term care facility and one senior residential living facility. The health system serves a region ranging over an 8,250 square mile area and encompassing 410,000 individuals residing in eight Pennsylvania counties. PHH provides care to the region's residents through the efforts of its 3,636 employees, of which 130 are advanced practice providers (physician assistants and nurse practitioners). And, 363 (148 employed by PHH) are physicians who practice as members of the Penn Highlands Physician Network (PHPN).

Upon reflection, PHH successes may be attributed to the following: the existence of a common set of beliefs shared by the leadership of all four institutions; collective agreement on a common vision and mission; the creation of an organization that was based on a common set of beliefs and guided by a shared vision and mission; and, the ability to pursue the mission in a purposeful way by realizing planned

strategies and exploiting emergent opportunities.

Without question, a driving force in PHH success was and remains a collective belief in the value of maintaining local responsibility and accountability for the provision of healthcare services. In all three instances, BH, CH, and ERHC deliberately chose not to affiliate with larger regional health systems. Of course there were precipitating factors that influenced their final choices. First, given the proximity of the hospitals, there was a history of personal and professional interactions that helped engender trust and confidence. In some ways this was demonstrated in the general confidence afforded Mr. Graeca in his pursuit of the regional alliance. Second, the hospitals successfully collaborated in the past. Third, the four hospital's primary service areas overlapped. Fourth, the size and scope of services of each institution were similar, with the exception of DRMC. DRMC possessed similar capabilities and also capabilities that complemented the services provided by the three other institutions. And finally, in a region with limited human and financial resources devoted to healthcare services, DRMC was in the best position to provide support without demanding full control of local operations.

Complementing the belief in local responsibility and accountability is the belief in equal representation of all four institutions in the governance and management of PHH. Success initially relied upon, and continues to count on, providing each institution with a voice and consideration on matters affecting their individual institutions and the system overall. As noted, the creation of PHH evolved from the CH demand for a stipulation of "equal footing" in the affiliation agreement between DRMC and CH. Finally, there is general consensus that improving the health status of the region's residents requires the active participation and leadership of physicians practicing in the four communities. Support for professional development and the governance and management structure of the PHH are examples of this underlying belief.

These beliefs then serve as the foundation for PHH vision and mission. Ultimately PHH envisions itself

as the leading integrated healthcare delivery system that provides premier care with a personal touch, no matter where one lives in the region. The mission of PHH as a community-based and controlled healthcare system is to secure, enhance and expand regional access to a wide array of premier primary care and advanced health services while supporting a reverence for life and the worth and dignity of each individual.

To carry out the mission of making sure all residents had access to quality and affordable care, PHH selected a hub-and-spoke regional service delivery model. A governance model with representation of all four institutions, with PHH physicians at the parent level and individual governing boards at the institutional level, was established to make sure power did not become concentrated at the top of the organization; representation from all key stakeholders remained; and two-way communication channels between the subsidiary organizations and the parent corporation stayed open and functioning. To further guarantee success, PHH relied upon management expertise and actions to realize its mission goals. PHH management efforts at developing and communicating a formal strategic plan, exploiting favorable federal programs (CAH, 340B Program, Rural Health Clinic) as vehicles to advance the plan, and creating accountability for successful execution are evidence of the requisite management expertise and skills counted upon.

Of course the formation of PHH was not without challenges. The transition issues reflect the difficulties of unifying four distinct communities, each with a fierce sense of pride and independence, the difficulties in accurately projecting the resources and capacity required to make the needed changes, and, the correct organizational structures and processes required for implementation. To date the benefits have outweighed the costs.

Appendix A: The Community Served

Exhibit A-1 (a, b, c, d) Population Density

The table depicts population density by ZIP code for each of PHPN's four hospital primary service areas. The values represent the distance in standard deviation (77 per square mile) from the Rural Pennsylvania Mean Population Density per Square Mile (110 per square mile). A review of population densities among the primary service areas of the four hospitals supports PHPN's implementation of a hub and spoke health system model and helps explain PHPN's primary care decisions concerning the number and location of new sites.

Exhibit A-1a Population Density PH DuBois

ZIP Code	Penn Highlands - Dubois	County	Density per Sq. Mile (2010)	Square Miles	Population	Z Score Based on Mean Rural Pa. Density
15834	Emporium	Cameron	22	204.14	4533	-1.23
16866	Philipsburg	Centre	62	160.25	9881	-0.67
15801	Dubois	Clearfield	298	64.64	19270	2.61
16830	Clearfield	Clearfield	107	128	13695	-0.05
16833	Curwensville	Clearfield	75	71.44	5342	-0.49
16838	Grampian	Clearfield	45	40.88	1821	-0.91
15849	Penfield	Clearfield	18	78.34	1399	-1.28
15848	Luthersburg	Clearfield	51	20.20	1027	-0.82
15757	McGees Mills	Clearfield	20	79.33	1618	-1.25
16881	Woodland	Clearfield	71	31.38	2232	-0.55
16858	Morrisdale	Clearfield	69	53.70	3688	-0.57
15857	St Marys	Elk	132	100.16	13212	0.30
15853	Ridgway	Elk	44	150.67	6578	-0.92
15846	Kersey	Elk	39	92.72	3636	-0.99
15823	Brockport	Elk	39	36.84	1431	-0.99
15845	Johnsonburg	Elk	103	31.04	3197	-0.10
15868	Weedville	Elk	14	94.66	1350	-1.34
15772	Rossiter	Indiana	54	31.90	1715	-0.78
15851	Reynoldsville	Jefferson	71	93.60	6671	-0.55
15767	Punxsutawney	Jefferson	89	165.29	14668	-0.30
15825	Brookville	Jefferson	60	160.37	9562	-0.70
15824	Brockway	Jefferson	74	73.02	5407	-0.50
15840	Falls Creek	Jefferson	104	19.20	1993	-0.09
15865	Sykesville	Jefferson	386	3.36	1295	3.83
15864	Summerville	Jefferson	50	36.57	1845	-0.84

Exhibit A1b Population Density PH Brookville

ZIP Code	Penn Highlands - Brookville	County	Density per Sq. Mile (2010)	Square Miles	Population	Z Score Based on Mean Rural Pa. Density
16240	Mayport	Armstrong	29	53.66	1533	-1.13
16242	New Bethlehem	Clarion	52	90.45	4693	-0.81
16214	Clarion	Clarion	206	49.22	10127	1.33
16255	Sligo	Clarion	47	40.91	1943	-0.88
15801	Dubois	Clearfield	298	64.64	19270	2.61
16239	Marienville	Forest	21	197.12	4172	-1.24
15825	Brookville	Jefferson	60	160.37	9562	-0.70
15860	Sigel	Jefferson	9	124.25	1065	-1.41
15767	Punxsutawney	Jefferson	89	165.29	14668	-0.30
15864	Summerville	Jefferson	50	36.57	1845	-0.84
15829	Corsica	Jefferson	36	35.37	1274	-1.03

Exhibit A1c Population Density PH Clearfield

ZIP Code	Penn Highlands - Clearfield	County	Density per Sq. Mile (2010)	Square Miles	Population	Z Score Based on Mean Rural Pa. Density
16866	Philipsburg	Centre	62	160.25	9881	-0.67
16830	Clearfield	Clearfield	107	128	13695	-0.05
16833	Curwensville	Clearfield	75	71.44	5342	-0.49
16881	Woodland	Clearfield	71	31.38	2232	-0.55
16843	Hyde	Clearfield	1647	0.40	657	21.36
16836	Frenchville	Clearfield	9	122.03	1152	-1.41
16863	Olanta	Clearfield	28	25.42	718	-1.14
16825	Bigler	Clearfield	447	0.54	240	4.68
16845	Karthaus	Clearfield	9	121.41	1088	-1.41
16855	Mineral springs	Clearfield	105	2.68	282	-0.07
16837	Glen Richey	Clearfield	220	0.85	186	1.53
16651	Houtzdale	Clearfield	210	4.12	866	1.39
16858	Morrisdale	Clearfield	69	53.70	3688	-0.57
16666	Osceola Mills	Clearfield	114	26.02	2960	0.05

Exhibit A1d Population Density PH Elk

ZIP Code	Penn Highlands - Elk	County	Density per Sq. Mile (2010)	Square Miles	Population	Z Score Based on Mean Rural Pa. Density
15834	Emporium	Cameron	22	204.14	4533	-1.23
15845	Johnsonburg	Elk	103	31.04	3197	-0.10
15846	Kersey	Elk	39	92.72	3636	-0.99
15853	Ridgway	Elk	44	150.67	6578	-0.92
15857	St Marys	Elk	132	100.16	13212	0.30

Exhibit A-2 (a, b, c, d) Penn Highlands Service Area Socio-Economic Data

Exhibit A2a Socioeconomic Data PH Dubois

Description	Description	Emporium	Philipsburg	Dubois	Clearfield	Curwensville	Grampian	Penfield	Luthersburg	McGees Mill	Woodland
		15834	16866	15801	16830	16833	16838	15849	15848	15757	16881
Population		4533	9881	19270	13695	5342	1821	1399	1027	1618	2232
Gender:	Male	48.80%	55.80%	48.30%	48.30%	49%	50.20%	50.50%	50.50%	50.80%	50.70%
	Female	51.30%	44.20%	51.70%	51.80%	51.10%	49.80%	49.50%	49.50%	49.20%	49.30%
Age:	Median	46.9	42.6	43.5	44.1	45.4	42.9	43.5	40.6	44.2	42.4
	18 years and under	20.50%	16.70%	21.40%	19.80%	20.60%	22.10%	20%	27.30%	22%	22.30%
	65 years and over	20.60%	17.40%	18.80%	20.60%	19.80%	17.60%	17.20%	13.80%	16.60%	15.90%
Race/Ethnicity	White	98.40%	89.50%	97.40%	97.70%	99%	99.20%	98.90%	97.80%	99.20%	99%
	All Others	1.60%	10.50%	2.60%	2.30%	1%	0.80%	1.10%	2.20%	0.80%	1%
Education	Less than High School	10.80%	14.10%	8.10%	11.70%	11.50%	10.50%	16%	19.20%	12.90%	11.90%
	High School	50.20%	48.80%	45.40%	46.10%	51.90%	52.00%	55.20%	50.20%	57.40%	55.10%
	Above High School	39.10%	37.10%	46.50%	42.20%	36.50%	37.50%	28.80%	30.70%	29.60%	32.90%
Personal Income	Mean Household Income	$54,986	$55,750	$51,687	$51,295	$49,305	$53,048	$48,734	$61,655	$45,502	$47,724
	Per Capita Income	$25,309	$23,090	$22,384	$23,003	$21,436	$21,455	$20,220	$21,030	$18,600	$19,589
Unemployment	Unemployment Rate	42.80%	3.80%	40.30%	4.50%	5.10%	3.50%	4.60%	3.40%	5.20%	3.30%
Health Insurance	Public Health Insurance	41.60%	34.50%	39.70%	42%	41.50%	625	609	378	685	35.80%
	No Health Insurance	8%	10%	9.90%	9.30%	9.30%	145	162	243	165	7.20%
Poverty Status	Family	8.30%	10.20%	11.20%	10.20%	9.80%	12.60%	13.20%	9.80%	13.40%	0.70%
	Individuals	13.20%	13.40%	15%	14.70%	11%	15.70%	20.20%	16.30%	18.80%	7.70%

Exhibit A2a Socioeconomic Data PH Dubois (cont.)

Description	Description	Morrisdale	St. Mary's	Ridgway	Kersey	Brockport	Johnsonburg	Weedville	Rossiter	Reynoldsville	Punxsutawney
		16858	15857	15853	15846	15823	15845	15868	15772	15851	15767
Population		3688	13212	6578	3636	1431	3197	1350	1715	6671	14668
Gender:	Male	49.90%	48.80%	49.70%	50.40%	52.30%	49.90%	49.30%	53.10%	50%	48.40%
	Female	50.10%	51.20%	50.30%	49.60%	47.70%	51.10%	50.70%	46.90%	50%	51.60%
Age:	Median	42.1	45.6	44.3	42.7	45.5	43.9	49.9	45.2	41.7	42
	18 years and under	22.10%	20.10%	22.20%	22.50%	20.90%	21.60%	17.30%	21%	22.70%	22.30%
	65 years and over	15.40%	20.30%	17.10%	16.30%	16.40%	18.30%	26.20%	17%	17.10%	17%
Race/Ethnicity	White	99%	98.50%	98.10%	99.30%	99%	98.40%	98.70%	99.20%	98.70%	97.80%
	All Others	1%	1.50%	1.90%	0.70%	1%	1.60%	1.30%	0.80%	1.30%	2.20%
Education	Less than High School	17.10%	10.10%	6.40%	10.10%	8.30%	8.60%	10.80%	24.60%	11.30%	13.60%
	High School	57.00%	49.80%	46.20%	53.10%	52.40%	60.90%	49.60%	51.50%	56.50%	48.90%
	Above High School	25.90%	40.20%	47.30%	36.80%	39.30%	30.60%	39.50%	23.80%	32.20%	37.60%
Personal Income	Mean Household Income	$53,356	$59,695	$52,139	$58,276	$53,027	$49,166	$56,449	$50,874	$49,816	$53,634
	Per Capita Income	$20,397	$25,645	$23,568	$23,302	$22,020	$22,424	$23,758	$18,722	$20,772	$21,766
Unemployment	Unemployment Rate	4.40%	2.70%	4.60%	2.60%	5.30%	4.30%	1.80%	5.20%	4.90%	4.30%
Health Insurance	Public Health Insurance	38.50%	36.50%	32.90%	28.20%	30.20%	40.70%	38.70%	14.50%	11.20%	35.90%
	No Health Insurance	11.50%	5.60%	7.20%	10.10%	6.70%	5.20%	5.10%	19.10%	12.40%	13.8
Poverty Status	Family	16.40%	9.30%	12.30%	2.50%	7.30%	8.50%	10.20%	15.10%	10.30%	11.10%
	Individuals	20.20%	10.20%	12.70%	3.20%	9.30%	11.00%	10.60%	24.10%	16.60%	16.80%

Description	Description	Brookville	Brockway	Fall Creek	Sykesville	Summerville		
		15825	15824	15840	15865	15864	PH Dubois	PA
Population		9562	5407	1993	1295	1845	137066	12758729
Gender:	Male	48.40%	49.60%	51.50%	48.80%	50.40%	49.61%	48.80%
	Female	51.60%	50.40%	48.50%	51.20%	49.60%	50.43%	51.20%
Age:	Median	45.1	41.8	45	42.3	42.9	43.74	40.40%
	18 years and under	20.10%	23.50%	18.70%	21.10%	22.30%	20.94%	21.50%
	65 years and over	21.30%	17.60%	18.60%	18%	15.10%	18.54%	16%
Race/Ethnicity	White	98.40%	98.70%	98.30%	98.80%	99%	97.63%	81.90%
	All Others	1.60%	1.30%	1.70%	1.20%	1%	2.37%	18.10%
Education	Less than High School	9.50%	8.20%	7.70%	20%	7.60%	11.03%	11%
	High School	50.50%	52.20%	54.20%	42.90%	51.10%	49.90%	36.80%
	Above High School	40%	39.50%	38.10%	37.10%	41.30%	39.08%	52.20%
Personal Income	Mean Household Income	$54,651	$53,020	$48,050	$41,216	$55,804	$53,167.55	$72,210
	Per Capita Income	$23,404	$22,753	$20,575	$17,779	$22,837	$22,606.07	$28,912
Unemployment	Unemployment Rate	4.10%	3.80%	4.20%	5.60%	5.60%	10.47%	5.40%
Health Insurance	Public Health Insurance	37.90%	9.30%	11.50%	42.10%	32%	2576.72%	31.90%
	No Health Insurance	9.10%	11.80%	13.30%	19.40%	7.40%	890.43%	9.50%
Poverty Status	Family	9%	12%	6.90%	16.70%	7.30%	10.20%	9.30%
	Individuals	12.50%	16.20%	9.40%	19.30%	10%	13.84%	13.50%

Exhibit A2b Socio Economic Data PH Brookville

		Mayport	New Beth	Clarion	Sligo	Dubois	Marienville	Brookville	Sigel	Punxsutawney	Summerville	Corsica		
Description	Description	16240	16242	16214	16255	15801	16239	15825	15860	15767	15864	15829	Brookville	PA
		1533	4,693	10127	1943	19270	4172	9562	1,065	14668	1845	1,274	70152	12758729
Population	Male	52.10%	48%	45.20%	48.60%	48.30%	79%	48.40%	52.70%	48.40%	50.40%	49.80%	49.93%	48.80%
Gender:	Female	48%	52%	54.80%	51.40%	51.70%	21%	51.60%	47.30%	51.60%	49.60%	50.20%	50.07%	51.20%
	Median	44	43.2	23.1	44.5	43.5	34.9	45.1	50	42	42.9	41.3	40.01	40.40%
Age:	18 years and under	19.60%	22.60%	13.30%	20.50%	21.40%	10.40%	20.10%	18.30%	22.30%	22.30%	22.40%	19.60%	21.50%
	65 years and over	18.20%	19.30%	11.90%	20.70%	18.80%	11.10%	21.30%	22.40%	17%	15.10%	17%	17.31%	16%
	White	99.10%	98.80%	93%	98.40%	97.40%	58.80%	98.40%	98.80%	97.80%	99%	98.80%	94.94%	81.90%
Race/Ethnicity	All Others	0.90%	1.20%	7%	1.60%	2.60%	41.20%	1.60%	1.20%	2.20%	1%	1.20%	5.06%	18.10%
	Less than High School	12.30%	14.10%	9.70%	8.30%	8.10%	21.10%	9.50%	12.10%	13.60%	7.60%	6.50%	10.96%	11%
Education	High School	60.40%	56.50%	35.60%	49.80%	45.40%	50.00%	50.50%	53.30%	48.90%	51.10%	52.70%	47.28%	36.80%
	Above High School	27.30%	29.30%	54.70%	41.90%	46.50%	28.90%	40%	34.60%	37.60%	41.30%	40.80%	41.77%	52.20%
	Mean Household Income	$53,501	$52,450	$51,280	$60,248	$51,687	$44,802	$54,651	$49,729	$53,634	$55,804	$58,321	$52,556.72	$72,210
Personal Income	Per Capita Income	$22,698	$22,872	$20,481	$23,191	$22,384	$8,675	$23,404	$24,439	$21,766	$22,837	$23,183	$21,423.29	$28,912
	Unemployment Rate	4%	4.40%	4.10%	5.40%	5.90%	0.50%	4.10%	3.30%	4.30%	5.60%	6.80%	4.55%	5.40%
Unemployment	Public Health Insurance	33.70%	40.80%	31.40%	42.10%	39.70%	48.80%	37.90%	43.10%	35.90%	32%	37.30%	37.82%	31.90%
Health Insurance	No Health Insurance	12%	9.30%	7.90%	13.50%	9.90%	7.90%	9.10%	9.50%	13.8	7.40%	6.60%	9.72%	9.50%
	Family	7.80%	9.70%	16.80%	6%	11.20%	7.90%	9%	7.00%	11.10%	7.30%	8.20%	10.88%	9.30%
Poverty Status	Individuals	11.20%	14.80%	37.80%	11.20%	15%	17.30%	12.50%	10.90%	16.80%	10%	13.60%	18.04%	13.50%

Exhibit A2c Socio Economic Data PH Clearfield

		Phillipsburg	Clearfiled	Curwensville	Woodland	Hyde	Frenchville	Olanta	Bigler	Karthaus	Mineral Spr	Glen Richey	Houtzdale	Morrisdale	Osceola Mill		
Description	**Description**	**16866**	**16830**	**16833**	**16881**	**16843**	**16836**	**16863**	**16825**	**16845**	**16855**	**16837**	**16651**	**16858**	**16666**	**Clearfield**	**PA**
Population		9881	13695	5342	2232	657	1152	718	240	1088	282	186	5813	3688	2960	**47934**	**12758729**
Gender:	**Male**	55.80%	48.30%	49%	50.70%	48%	52%	51.30%	51.70%	62.20%	47.50%	48.90%	68.40%	49.90%	49.90%	**50.79%**	**48.80%**
	Female	44.20%	51.80%	51.10%	49.30%	52.10%	48%	48.80%	48.30%	37.80%	52.50%	51.10%	31.60%	50.10%	50.10%	**44.59%**	**51.20%**
Age:	**Median**	42.6	44.1	45.4	42.4	49.3	46.3	46.9	43.9	34.7	42.5	39.5	37.9	42.1	42.1	**40.78**	**40.40%**
	18 years and under	16.70%	19.80%	20.60%	22.30%	16.80%	19.20%	20.10%	21.70%	13.10%	19.90%	26.30%	13%	22.10%	22%	**17.62%**	**21.50%**
	65 years and over	17.40%	20.60%	19.80%	15.90%	22.40%	16.30%	17.60%	13%	12.90%	19.10%	12.90%	12%	15.40%	16.20%	**16.80%**	**16%**
Race/Ethnicity	**White**	89.50%	97.70%	99%	99%	99.40%	98.60%	99.60%	98.80%	80.10%	97.50%	98.40%	76%	99%	98.90%	**88.83%**	**81.90%**
	All Others	10.50%	2.30%	1%	1%	0.60%	1.40%	0.40%	1.20%	19.90%	2.50%	1.60%	24%	1%	1.10%	**6.51%**	**18.10%**
Education	**Less than High School**	14.10%	11.70%	11.50%	11.90%	37.00%	10.70%	7.40%	13.00%	15.70%	9.90%	10.60%	18.80%	16.40%	12.60%	**13.25%**	**11%**
	High School	48.80%	46.10%	51.90%	55.10%	39.70%	62.00%	57.50%	62.30%	55.70%	79.10%	71.80%	51.20%	57.40%	56.20%	**48.33%**	**36.80%**
	Above High School	37.10%	42.20%	36.50%	32.90%	23.20%	27.30%	35.10%	23.70%	28.60%	11.00%	17.60%	30.00%	36.20%	31.20%	**34.52%**	**52.20%**
Personal Income	**Mean Household Income**	$55,750	$51,295	$49,305	$47,724	$43,652	$52,438	$49,846	$41,298	$59,808	$29,686	$39,550	$51,180	$53,356	$47,524	**$49,386.30**	**$72,210**
	Per Capita Income	$23,090	$23,003	$21,436	$19,589	$25,700	$22,323	$20,929	$14,971	$18,545	$13,134	$16,797	$15,389	$20,397	$20,700	**$20,275.13**	**$28,912**
Unemployment	**Unemployment Rate**	6.70%	7.80%	9.50%	5.60%	30.30%	9.30%	19.80%	14.70%	4.30%	13%	30.30%	6%	7.70%	10.90%	**8.00%**	**8.60%**
Health Insurance	**Public Health Insurance**	34.50%	42%	41.50%	35.80%	0%	8.80%	9.10%	34.60%	32.40%	39.70%	37.80%	40.30%	38.50%	42.20%	**35.83%**	**31.90%**
	No Health Insurance	10%	9.30%	9.30%	7.20%	0%	12.90%	14.30%	16.70%	8%	0%	10.10%	10.50%	11.50%	13.50%	**9.58%**	**9.50%**
Poverty Status	**Family**	10.20%	10.20%	9.80%	0.70%	0%	6%	8.30%	45.50%	1.80%	22.40%	0%	15.70%	16.40%	17.50%	**11.02%**	**9.30%**
	Individuals	13.40%	14.70%	11%	7.70%	5.70%	10.30%	17.50%	49.60%	5.70%	30.40%	10.10%	17.50%	20.20%	19.40%	**14.25%**	**13.50%**

Exhibit A2d Socio Economic Data PH Elk

		Emporium	Johnsonburg	Kersey	Ridgway	St Mary's		
Description	Description	15834	15845	15846	15853	15857	PH Elk	PA
Population		4533	3197	3636	6578	13212	31156	12758729
Gender:	Male	48.80%	49.90%	50.40%	49.70%	48.80%	49.29%	48.80%
	Female	51.30%	51.10%	49.60%	50.30%	51.20%	50.83%	51.20%
Age:	Median	46.9	43.9	42.7	44.3	45.6	45.00	40.40%
	18 years and under	20.50%	21.60%	22.50%	22.20%	20.10%	21.04%	21.50%
	65 years and over	20.60%	18.30%	16.30%	17.10%	20.30%	19.00%	16%
Race/Ethnicity	White	98.40%	98.40%	99.30%	98.10%	98.50%	98.48%	81.90%
	All Others	1.60%	1.60%	0.70%	1.90%	1.50%	1.52%	18.10%
Education	Less than High School	10.80%	8.60%	10.10%	6.40%	10.10%	9.27%	11%
	High School	50.20%	60.90%	53.10%	46.20%	49.80%	50.62%	36.80%
	Above High School	39.10%	30.60%	36.80%	47.30%	40.20%	40.16%	52.20%
Personal Income	Mean Household Income	$54,986	$49,166	$58,276	$52,139	$59,695	$56,169	$72,210
	Per Capita Income	$25,309	$22,424	$23,302	$23,568	$25,645	$24,554	$28,912
Unemployment	Unemployment Rate	42.80%	4.30%	2.60%	4.60%	2.70%	9.09%	5.40%
Health Insurance	Public Health Insurance	41.60%	40.70%	28.20%	32.90%	36.50%	35.94%	31.90%
	No Health Insurance	8%	5.20%	10.10%	7.20%	5.60%	6.77%	9.50%
Poverty Status	Family	8.30%	8.50%	2.50%	12.30%	9.30%	8.91%	9.30%
	Individuals	13.20%	11.00%	3.20%	12.70%	10.20%	10.43%	13.50%

Source: U. S. Census Bureau (2014 American Community Survey)

Exhibit A3 (a, b, c, d) Penn Highlands Business and Industry Employment Profile
Exhibit A3a Business and Industry Employment Profile PH Dubois

	Emporium	Philipsburg	Dubois	Clearfield	Curwensville	Grampian	Penfield	Luthersburg	McGees Mill
Description	15834	16866	15801	16830	16833	16838	15849	15848	15757
Civilian employed population 16 years and over	2042	4554	8539	6112	2205	827	584	424	621
Agriculture, forestry, fishing and hunting, and mining	5.00%	2.60%	2.00%	2.70%	4.60%	4.40%	4.30%	5.20%	6.10%
Construction	4.80%	7.10%	4.30%	4.80%	9.90%	10.30%	2.20%	15.80%	9.50%
Manufacturing	39.20%	6.80%	11.00%	7.90%	11.70%	10.20%	13.90%	12.00%	7.20%
Wholesale trade	0.90%	3.60%	1.80%	2.30%	3.60%	3.10%	3.60%	1.20%	2.40%
Retail trade	8.60%	12.60%	14.20%	16.70%	12.80%	10.80%	17.60%	8.30%	13.50%
Transportation and warehousing, and utilities	3.60%	6.70%	7.00%	7.00%	4.50%	12.20%	8.20%	7.30%	15.50%
Information	1.00%	0.30%	1.30%	1.40%	1.10%	1.00%	1.40%	0.70%	2.10%
Finance and insurance, and real estate and rental and leasing	1.40%	4.80%	5.10%	6.80%	5.50%	2.20%	4.10%	0.00%	1.90%
Professional, scientific, and management, and administrative and waste management services	3.80%	6.70%	4.70%	5.40%	6.30%	7.90%	4.30%	7.80%	6.10%
Educational services, and health care and social assistance	14.00%	29.30%	27.30%	24.80%	22.20%	19.80%	14.40%	25.50%	19.50%
Arts, entertainment, and recreation, and accommodation and food services	8.60%	7.00%	10.30%	7.00%	7.00%	8.60%	8.70%	4.70%	4.80%
Other services, except public administration	5.60%	5.50%	8.00%	5.00%	5.50%	4.60%	11.60%	8.70%	7.10%
Public administration	3.50%	7.00%	3.00%	8.30%	5.10%	5.10%	5.70%	2.80%	4.20%

	Morrisdale	St. Mary's	Ridgway	Kersey	Brockport	Johnsonburg	Weedville	Rossiter	Reynoldsville
Description	16858	15857	15853	15846	15823	15845	15868	15772	15851
Civilian employed population 16 years and over	1656	6215	2971	1900	748	1379	632	790	2972
Agriculture, forestry, fishing and hunting, and mining	7.50%	1.20%	1.40%	0.70%	2.70%	2.00%	4.40%	10.50%	3.90%
Construction	10.60%	2.30%	7.00%	7.50%	6.10%	5.90%	3.20%	12.40%	9.10%
Manufacturing	9.60%	46.50%	32.60%	37.90%	29.50%	36.80%	28.80%	17.20%	16.00%
Wholesale trade	4.00%	1.60%	1.10%	3.50%	1.50%	0.90%	0.60%	1.80%	1.50%
Retail trade	9.10%	8.10%	8.30%	13.70%	10.00%	7.20%	10.40%	11.40%	13.50%
Transportation and warehousing, and utilities	8.60%	2.30%	4.30%	3.00%	4.40%	4.40%	9.30%	6.60%	7.70%
Information	0.00%	1.40%	0.40%	0.00%	0.70%	0.90%	2.80%	1.00%	1.70%
Finance and insurance, and real estate and rental and leasing	1.30%	2.70%	1.50%	1.90%	1.30%	3.00%	0.00%	1.30%	3.10%
Professional, scientific, and management, and administrative and waste management services	6.30%	5.40%	5.60%	6.20%	4.50%	1.90%	7.30%	4.40%	5.90%
Educational services, and health care and social assistance	24.80%	17.90%	22.00%	14.90%	27.70%	15.70%	15.50%	21.00%	21.20%
Arts, entertainment, and recreation, and accommodation and food services	8.50%	3.90%	6.20%	7.40%	7.00%	10.70%	9.20%	6.80%	7.00%
Other services, except public administration	3.50%	4.60%	3.20%	2.40%	3.60%	6.70%	5.70%	3.90%	6.90%
Public administration	6.10%	1.90%	6.50%	0.90%	0.90%	3.80%	2.70%	1.60%	2.40%

Exhibit A3a Business and Industry Employment Profile PH Dubois (cont.)

	Punxsutawney	Brookville	Brockway	Fall Creek	Sykesville	Summerville	PH Dubois	PA
Description	**15767**	**15825**	**15824**	**15840**	**15865**	**15864**		
Civilian employed population 16 years and over	**6249**	**4197**	**2302**	**894**	**632**	**806**	**60251**	5946480
Agriculture, forestry, fishing and hunting, and mining	**8.30%**	**3.90%**	**2.00%**	**2.30%**	**0.90%**	**3.30%**	**3.47%**	**1.40%**
Construction	**8.00%**	**4.80%**	**6.40%**	**11.60%**	**6.20%**	**10.50%**	**6.28%**	**5.70%**
Manufacturing	**12.90%**	**18.40%**	**21.00%**	**12.40%**	**18.40%**	**17.70%**	**19.49%**	**12.20%**
Wholesale trade	**4.50%**	**1.90%**	**2.60%**	**1.80%**	**3.30%**	**1.20%**	**2.39%**	**2.80%**
Retail trade	**11.40%**	**10.90%**	**11.10%**	**20.70%**	**15.70%**	**9.70%**	**12.04%**	**11.80%**
Transportation and warehousing, and utilities	**6.30%**	**7.60%**	**5.90%**	**5.90%**	**7.10%**	**5.20%**	**6.11%**	**5.10%**
Information	**0.90%**	**1.80%**	**0.80%**	**2.60%**	**0.50%**	**0.40%**	**1.10%**	**1.70%**
Finance and insurance, and real estate and rental and leasing	**3.40%**	**1.90%**	**3.20%**	**2.80%**	**3.80%**	**0.90%**	**3.50%**	**6.40%**
Professional, scientific, and management, and administrative and waste management services	**4.10%**	**5.80%**	**7.00%**	**5.50%**	**4.00%**	**6.30%**	**5.38%**	**9.80%**
Educational services, and health care and social assistance	**25.40%**	**24.60%**	**27.50%**	**18.70%**	**21.00%**	**27.20%**	**23.22%**	**26.00%**
Arts, entertainment, and recreation, and accommodation and food services	**7.10%**	**5.50%**	**4.60%**	**8.50%**	**11.90%**	**7.30%**	**7.21%**	**8.30%**
Other services, except public administration	**4.50%**	**6.70%**	**6.00%**	**4.90%**	**6.20%**	**6.70%**	**5.60%**	**4.70%**
Public administration	**3.10%**	**6.20%**	**2.00%**	**2.20%**	**1.10%**	**3.50%**	**4.19%**	**4.10%**

Exhibit A3b Business and Industry Employment Profile PH Brookville

Description	**16240**	**16242**	**16214**	**16255**	**15801**	**16239**	**15825**	**15860**	**15767**	**15864**	**15829**	**Brookville**	PA
Civilian employed population 16 years and over	684	1,908	4,020	736	8,539	547	4,197	396	6,249	806	609	**28691**	5,946,480
Agriculture, forestry, fishing and hunting, and mining	16.20%	6.50%	0.90%	2.20%	2.00%	8.60%	3.90%	8.30%	8.30%	3.30%	3.00%	**4.43%**	1.40%
Construction	11.80%	7.80%	5.10%	7.60%	4.30%	5.30%	4.80%	8.30%	8.00%	10.50%	19.70%	**6.37%**	5.70%
Manufacturing	11.50%	11.70%	5.40%	13.90%	11.00%	8.40%	18.40%	6.60%	12.90%	17.70%	13.00%	**11.96%**	12.20%
Wholesale trade	2.00%	1.50%	2.50%	2.00%	1.80%	0.90%	1.90%	0.80%	4.50%	1.20%	1.00%	**2.41%**	2.80%
Retail trade	4.50%	15.60%	12.60%	15.10%	14.20%	6.40%	10.90%	6.60%	11.40%	9.70%	15.10%	**12.42%**	11.80%
Transportation and warehousing, and utilities	10.20%	9.10%	2.90%	4.50%	7.00%	5.70%	7.60%	5.80%	6.30%	5.20%	7.10%	**6.44%**	5.10%
Information	0.30%	1.00%	0.20%	2.20%	1.30%	1.80%	1.80%	1.50%	0.90%	0.40%	0.00%	**1.09%**	1.70%
Finance and insurance, and real estate and rental and leasing	4.40%	2.50%	1.30%	1.90%	5.10%	6.00%	1.90%	1.50%	3.40%	0.90%	1.10%	**3.22%**	6.40%
Professional, scientific, and management, and administrative and waste management services	6.30%	4.90%	6.20%	5.70%	4.70%	4.00%	5.80%	1.50%	4.10%	6.30%	4.40%	**5.01%**	9.80%
Educational services, and health care and social assistance	18.00%	24.00%	38.60%	33.00%	27.30%	21.20%	24.60%	28.30%	25.40%	27.20%	19.70%	**27.52%**	26.00%
Arts, entertainment, and recreation, and accommodation and food services	8.20%	5.40%	15.80%	3.80%	10.30%	12.80%	5.50%	10.60%	7.10%	7.30%	5.90%	**9.00%**	8.30%
Other services, except public administration	3.80%	6.20%	3.50%	4.20%	8.00%	6.80%	6.70%	9.30%	4.50%	6.70%	7.60%	**6.04%**	4.70%
Public administration	2.60%	3.90%	4.80%	3.90%	3.00%	12.10%	6.20%	10.90%	3.10%	3.50%	2.50%	**4.10%**	4.10%

Exhibit A3c Business and Industry Employment Profile PH Clearfield

	Philipsburg	Clearfield	Curwensville	Hyde	Frenchville	Olanta	Bigler	Karthaus	Mineral Spr	Glen Richey	Houtzdale	Morrisdale	Osceola Mill		
	16866	16830	16833	16843	16836	16863	16825	16845	16855	16837	16651	16858	16666	Clearfield	PA
Civilian employed population 16 years and over	4,554	6,112	2,205	101	554	247	116	403	177	23	737	1,656	1,322	18,207	5,946,480
Agriculture, forestry, fishing and hunting, and mining	2.60%	2.70%	4.60%	0.00%	10.80%	0.80%	0.00%	11.70%	0.00%	60.90%	0.00%	7.50%	1.70%	3.60%	1.40%
Construction	7.10%	4.80%	9.90%	0.00%	7.60%	9.30%	0.00%	9.90%	9.60%	0.00%	5.70%	10.60%	16.60%	7.66%	5.70%
Manufacturing	6.80%	7.90%	11.70%	0.00%	11.90%	19.00%	15.50%	10.70%	0.00%	0.00%	2.70%	9.60%	8.80%	8.34%	12.20%
Wholesale trade	3.60%	2.30%	3.60%	0.00%	1.40%	5.70%	0.00%	0.20%	0.00%	0.00%	8.00%	4.00%	1.40%	3.04%	2.80%
Retail trade	12.60%	16.70%	12.80%	7.90%	12.80%	15.40%	43.10%	10.70%	50.80%	0.00%	3.40%	9.10%	9.70%	13.60%	11.80%
Transportation and warehousing, and utilities	6.70%	7.00%	4.50%	22.80%	10.30%	6.10%	0.00%	7.20%	0.00%	0.00%	0.00%	8.60%	6.00%	6.49%	5.10%
Information	0.30%	1.40%	1.10%	0.00%	0.40%	0.80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.70%	1.70%
Finance and insurance, and real estate and rental and leasing	4.80%	6.80%	5.50%	0.00%	5.10%	2.80%	0.00%	5.20%	8.50%	0.00%	0.00%	1.30%	1.60%	4.75%	6.40%
Professional, scientific, and management, and administrative and waste management services	6.70%	5.40%	6.30%	0.00%	2.70%	0.80%	14.70%	3.70%	0.00%	0.00%	10.30%	6.30%	5.40%	5.90%	9.80%
Educational services, and health care and social assistance	29.30%	24.80%	22.20%	38.60%	17.00%	23.50%	16.40%	23.80%	22.00%	0.00%	46.90%	24.80%	27.50%	26.39%	26.00%
Arts, entertainment, and recreation, and accommodation and food services	7.00%	7.00%	7.00%	0.00%	7.60%	8.90%	0.00%	3.50%	9.00%	0.00%	19.90%	8.50%	7.90%	7.62%	8.30%
Other services, except public administration	5.50%	5.00%	5.50%	0.00%	2.90%	3.20%	10.30%	4.20%	0.00%	0.00%	3.00%	3.50%	5.10%	4.82%	4.70%
Public administration	7.00%	8.30%	5.10%	30.70%	9.60%	3.60%	0.00%	9.20%	0.00%	39.10%	0.00%	6.10%	8.10%	7.08%	4.10%

Exhibit A3d Business and Industry Employment Profile PH Elk

	Emporium	Johnsonburg	Kersey	Ridgway	St Mary's		
Description	15834	15845	15846	15853	15857	PH Elk	PA
Civilian employed population 16 years and over	2,042	1,379	1,900	2,971	6,215	14,507	5,946,480
Agriculture, forestry, fishing and hunting, and mining	5.00%	2.00%	0.70%	1.40%	1.20%	1.78%	1.40%
Construction	4.80%	5.90%	7.50%	7.00%	2.30%	4.63%	5.70%
Manufacturing	39.20%	36.80%	37.90%	32.60%	46.50%	40.57%	12.20%
Wholesale trade	0.90%	0.90%	3.50%	1.10%	1.60%	1.59%	2.80%
Retail trade	8.60%	7.20%	13.70%	8.30%	8.10%	8.88%	11.80%
Transportation and warehousing, and utilities	3.60%	4.40%	3.00%	4.30%	2.30%	3.21%	5.10%
Information	1.00%	0.90%	0.00%	0.40%	1.40%	0.90%	1.70%
Finance and insurance, and real estate and rental and leasing	1.40%	3.00%	1.90%	1.50%	2.70%	2.20%	6.40%
Professional, scientific, and management, and administrative and waste management	3.80%	1.90%	6.20%	5.60%	5.40%	5.00%	9.80%
Educational services, and health care and social assistance	14.00%	15.70%	14.90%	22.00%	17.90%	17.60%	26.00%
Arts, entertainment, and recreation, and accommodation and food services	8.60%	10.70%	7.40%	6.20%	3.90%	6.16%	8.30%
Other services, except public administration	5.60%	6.70%	2.40%	3.20%	4.60%	4.39%	4.70%
Public administration	3.50%	3.80%	0.90%	6.50%	1.90%	3.11%	4.10%

Percentages represent civilian employed population 16 years and older residing within primary service area.
Source: U. S. Census Bureau (2014 American Community Survey).

Appendix B: Community Health Status, Needs, and Resources

Exhibit B1 (a, b, c, d) Health Behavior Data

Exhibit B1a Health Behavior Data Clarion County

Description	Clarion County (2015)	Pennsylvania (2015)	Clarion County (2014)	Pennsylvania (2014)	Clarion County (2013)	Pennsylvania (2013)	Clarion County (2012)	Pennsylvania (2012)	Clarion County (2011)	Pennsylvania (2011)
Adult Smoking	18%	20%	18%	20%	17%	21%	15%	21%	17%	22%
Adult Obesity	33%	29%	32%	29%	32%	29%	32%	29%	30%	28%
Physical Inactivity	24%	24%	26%	26%	30%	26%	30%	26%	24%	26%
Excessive Drinking	12%	17%	12%	17%	14%	17%	17%	18%	17%	18%
STD (per100,000)	219	431	155	415	198	374	153	346	208	340
Teen Births (per 1000)	18	28	19	29	18	29	21	31	20	31

Exhibit B1b Health Behavior Data Clearfield County

Description	Clearfield County (2015)	Pennsylvania (2015)	Clearfield County (2014)	Pennsylvania (2014)	Clearfield County (2013)	Pennsylvania (2013)	Clearfield County (2012)	Pennsylvania (2012)	Clearfield County (2011)	Pennsylvania (2011)
Adult Smoking	19%	20%	19%	20%	22%	21%	21%	21%	19%	22%
Adult Obesity	30%	29%	29%	29%	29%	29%	29%	29%	31%	28%
Physical Inactivity	25%	24%	25%	26%	25%	26%	25%	26%	27%	26%
Excessive Drinking	17%	17%	17%	17%	17%	17%	17%	18%	20%	18%
STD (per100,000)	149	431	125	415	116	374	99	346	140	340
Teen Births (per 1000)	27	28	27	29	28	29	32	31	33	31

Exhibit B1c Health Behavior Data Jefferson County

Description	Jefferson County (2015)	Pennsylvania (2015)	Jefferson County (2014)	Pennsylvania (2014)	Jefferson County (2013)	Pennsylvania (2013)	Jefferson County (2012)	Pennsylvania (2012)	Jefferson County (2011)
Adult Smoking	26%	20%	26%	20%	24%	21%	26%	21%	26%
Adult Obesity	30%	29%	29%	29%	30%	29%	30%	29%	28%
Physical Inactivity	29%	24%	30%	26%	30%	26%	30%	26%	30%
Excessive Drinking	21%	17%	21%	17%	19%	17%	18%	18%	16%
STD (per100,000)	156	431	149	415	95	374	98	346	115
Teen Births (per 1000)	34	28	33	29	33	29	35	31	34

Exhibit B1d Health Behavior Data Elk County

Description	Elk County (2015)	Pennsylvania (2015)	Elk County (2014)	Pennsylvania (2014)	Elk County (2013)	Pennsylvania (2013)	Elk County (2012)	Pennsylvania (2012)	Elk County (2011)
Adult Smoking	29%	20%	29%	20%	28%	21%	27%	21%	29%
Adult Obesity	29%	29%	31%	29%	32%	29%	32%	29%	29%
Physical Inactivity	28%	24%	31%	26%	30%	26%	30%	26%	26%
Excessive Drinking	24%	17%	24%	17%	26%	17%	25%	18%	28%
STD (per100,000)	178	431	107	415	75	374	50	346	74
Teen Births (per 1000)	25	28	22	29	21	29	18	31	18

Source: Robert Wood Johnson County Health Rankings and Roadmaps.

Exhibit B2 (a, b, c, d) Morbidity Data

Exhibit B2a Morbidity Data Clarion County

Description	Clarion County (2015)	Pennsylvania (2015)	Clarion County (2014)	Pennsylvania (2014)	Clarion County (2013	Pennsylvania (2013)	ClarionCounty (2012)	Pennsylvania (2012)	Clarion County (2011)	Pennsylvania (2011)
Poor Physical Health Days (ave. in past 30 days)	3	3.5	3	3.5	2.9	3.5	2.8	3.5	3.7	3.5
Poor Mental Health Days (ave. in past 30 days)	2.7	3.6	2.7	3.6	2.8	3.6	3.2	3.6	3.9	3.6
Diabetes	11%	10%	10%	10%	11%	10%	11%	10%	10%	9%
HIV Prevalence (per 100,000)	49	292	40	292	44	293	38	294	35	N/A
Drug Poisoning Deaths (per 100,000)	9	15	14	14	NA	N/A	NA	N/A	NA	N/A

Exhibit B2b Morbidity Data Clearfield County

Description	Clearfield County (2015)	Pennsylvania (2015)	Clearfield County (2014)	Pennsylvania (2014)	Clearfield County (2013)	Pennsylvania (2013)	Clearfield County (2012)	Pennsylvania (2012)	Clearfield County (2011)	Pennsylvania (2011)
Poor Physical Health Days (ave. in past 30 days)	3.8	3.5	3.8	3.5	3.8	3.5	3.7	3.5	3.4	3.5
Poor Mental Health Days (ave. in past 30 days)	2.8	3.6	2.8	3.6	3	3.6	3	3.6	3.3	3.6
Diabetes	12%	10%	10%	10%	11%	10%	11%	10%	10%	9%
HIV Prevalence (per 100,000)	100	292	100	292	91	293	88	294	83	N/A
Drug Poisoning Deaths (per 100,000)	11	15	13	14	N/A	N/A	N/A	N/A	N/A	N/A

Exhibit B2c Morbidity Data Jefferson County

Description	Jefferson County (2015)	Pennsylvania (2015)	Jefferson County (2014)	Pennsylvania (2014)	Jefferson County (2013)	Pennsylvania (2013)	Jefferson County (2012)	Pennsylvania (2012)	Jefferson County (2011)	Pennsylvania (2011)
Poor Physical Health Days (ave. in past 30 days)	4	3.5	4	3.5	3.4	3.5	3.3	3.5	3.2	3.5
Poor Mental Health Days (ave. in past 30 days)	4.7	3.6	4.7	3.6	4.2	3.6	4.2	3.6	4.1	3.6
Diabetes	14%	10%	13%	10%	13%	10%	13%	10%	10%	9%
HIV Prevalence (per 100,000)	39	292	39	292	37	293	37	294	36	N/A
Drug Poisoning Deaths (per 100,000)	11	15	8	14	N/A	N/A	N/A	N/A	N/A	N/A

Exhibit B2d Morbidity Data Elk County

Description	Elk County (2015)	Pennsylvania (2015)	Elk County (2014)	Pennsylvania (2014)	Elk County (2013)	Pennsylvania (2013)	Elk County (2012)	Pennsylvania (2012)	Elk County (2011)	Pennsylvania (2011)
Poor Physical Health Days (ave. in past 30 days)	5.3	3.5	5.3	3.5	5.1	3.5	5	3.5	4.6	3.5
Poor Mental Health Days (ave. in past 30 days)	7	3.6	7	3.6	5.7	3.6	5.7	3.6	5.5	3.6
Diabetes	13%	10%	13%	10%	11%	10%	11%	10%	9%	9%
HIV Prevalence (per 100,000)	26	292	26	292	22	293	22	294	18	N/A
Drug Poisoning Deaths (per 100,000)	14	15	11	14	N/A	N/A	N/A	N/A	N/A	N/A

Source: Robert Wood Johnson County Health Rankings and Roadmaps.

Exhibit B3 (a, b, c, d) Mortality Data

Exhibit B3a Mortality Data Clarion County

Description	Clarion County (2010-12)	Pennsylvania (2010-12)	Clarion County (2009-11)	Pennsylvania (2009-11)	Clarion County (2008-10)	Pennsylvania (2008-10)	ClarionCounty (2007-09)	Pennsylvania (2007-09)	ClarionCounty (2006-08)	Pennsylvania (2006-08)
Heart	*206.1	181.5	206	186.6	201.4	194	199.3	203.2	203.8	215.4
Cancer	181.8	176.7	182.2	180	181.5	183.8	169	187.6	175.9	191.6
Stroke	40.5	38.3	38.2	39.3	45.3	40.1	44.9	42.6	47.5	45.3
CLRD	49.9	38.6	58.9	38.9	59.9	39.9	49.5	40.6	41.4	40
Accidents	46.7	42.3	50	40.8	51.2	40.4	50.8	40.8	43.3	40.9
Alzheimer's	26.5	19.2	23	19.3	28.7	20.6	28.2	21.4	30.3	22.5
Diabetes	36.5	20.8	37.1	20.2	37.3	20.4	36.1	21.4	36.5	22.4
Nephritis	14.7	16.9	15.8	17.7	23	18.6	22.2	19	21.4	19.9
Influenza	15.5	14.1	15.2	14.7	13.3	15	14.9	16	15.3	17.1
Septicemia	7.1	13.1	7.9	13.7	ND	14.2	ND	15.2	ND	16.2
Age Adjusted Death Rate (1000)	8.1	7.5	8.1	7.7	8.1	7.6	8	7.7	8.5	8.1
	*per 100,000									

Exhibit B3b Mortality Data Clearfield County

Description	Clearfield County (2010-12)	Pennsylvania (2010-12)	Clearfield County (2009-11)	Pennsylvania (2009-11)	Clearfield County (2008-10)	Pennsylvania (2008-10)	Clearfield County (2007-09)	Pennsylvania (2007-09)	Clearfield County (2006-08)	Pennsylvania (2006-08)
Heart	*198	181.5	211.7	186.6	215.5	194	229.6	203.2	251	215.4
Cancer	182.4	176.7	186.5	180	182.6	183.8	185.9	187.6	195	191.6
Stroke	32.1	38.3	30.7	39.3	41.1	40.1	41.2	42.6	45.9	45.3
CLRD	55.2	38.6	49	38.9	45.3	39.9	48.3	40.6	48	40
Accidents	43.4	42.3	46.3	40.8	50.2	40.4	55	40.8	51.4	40.9
Alzheimer's	19.6	19.2	20.6	19.3	19.5	20.6	22.6	21.4	24.3	22.5
Diabetes	29.7	20.8	27.9	20.2	31.6	20.4	30.2	21.4	31.3	22.4
Nephritis	22	16.9	20.9	17.7	20.9	18.6	19.5	19	20.8	19.9
Influenza	13	14.1	13.9	14.7	15.7	15	16.2	16	17.1	17.1
Septicemia	10.1	13.1	11.8	13.7	12.7	14.2	12.1	15.2	12.1	16.2
Age Adjusted Death Rate (1000)	7.8	7.5	8.1	7.7	8.1	7.6	7.7	7.7	8.5	8.1

*per 100,000

Exhibit B3c Mortality Data Jefferson County

Description	Jefferson County (2010-12)	Pennsylvania (2010-12)	Jefferson County (2009-11)	Pennsylvania (2009-11)	Jefferson County (2008-10)	Pennsylvania (2008-10)	Jefferson County (2007-09)	Pennsylvania (2007-09)	Jefferson County (2006-08)	Pennsylvania (2006-08)
Heart	*194.1	181.5	193.9	186.6	206.2	194	220.2	203.2	244.5	215.4
Cancer	184.8	176.7	182.8	180	189.7	183.8	176.5	187.6	173	191.6
Stroke	55.4	38.3	52.9	39.3	59.4	40.1	62	42.6	70.2	45.3
CLRD	55.9	38.6	53.6	38.9	49.9	39.9	48.7	40.6	46.8	40
Accidents	53.3	42.3	44.7	40.8	55.6	40.4	58.8	40.8	61.7	40.9
Alzheimer's	23.1	19.2	23.2	19.3	25.9	20.6	23.7	21.4	26.7	22.5
Diabetes	26	20.8	22.1	20.2	23.3	20.4	25.3	21.4	31	22.4
Nephritis	33	16.9	30.4	17.7	28.6	18.6	27.3	19	28.5	19.9
Influenza	16.3	14.1	14.2	14.7	12.4	15	13.7	16	16.3	17.1
Septicemia	11.9	13.1	14	13.7	14.9	14.2	15.9	15.2	15.9	16.2
Age Adjusted Death Rate (1000)	8.7	7.5	7.9	7.7	9	7.6	8	7.7	9.1	8.1

Exhibit B3d Mortality Data Elk County

Description	Elk County (2010-12)	Pennsylvania (2010-12)	Elk County (2009-11)	Pennsylvania (2009-11)	Elk County (2008-10)	Pennsylvania (2008-10)	Elk County (2007-09)	Pennsylvania (2007-09)	Elk County (2006-08)	Pennsylvania (2006-08)
Heart	***151.3**	**181.5**	**166.1**	**186.6**	**170.7**	**194**	**176.9**	**203.2**	**173.9**	**215.4**
Cancer	**191.1**	**176.7**	**194.9**	**180**	**187.9**	**183.8**	**189.8**	**187.6**	**191.9**	**191.6**
Stroke	**31.8**	**38.3**	**32**	**39.3**	**37.6**	**40.1**	**41.3**	**42.6**	**51.4**	**45.3**
CLRD	**49.2**	**38.6**	**50.1**	**38.9**	**45.3**	**39.9**	**44.1**	**40.6**	**42.9**	**40**
Accidents	**63.5**	**42.3**	**45.2**	**40.8**	**45.8**	**40.4**	**44.8**	**40.8**	**46**	**40.9**
Alzheimer's	**37.5**	**19.2**	**32.8**	**19.3**	**34.4**	**20.6**	**31.2**	**21.4**	**32.5**	**22.5**
Diabetes	**27.5**	**20.8**	**31.3**	**20.2**	**26.5**	**20.4**	**29.1**	**21.4**	**26**	**22.4**
Nephritis	**29.3**	**16.9**	**26.1**	**17.7**	**18.4**	**18.6**	**14.7**	**19**	**17.2**	**19.9**
Influenza	**18.5**	**14.1**	**18.7**	**14.7**	**16.9**	**15**	**13.7**	**16**	**ND**	**17.1**
Septicemia	**13.7**	**13.1**	**13.5**	**13.7**	**ND**	**14.2**	**ND**	**15.2**	**14.4**	**16.2**
Age Adjusted Death Rate (1000)	**7.5**	**7.5**	**8**	**7.7**	**7.8**	**7.6**	**7.3**	**7.7**	**7.5**	**8.1**

*****per 100,000

Source: Pennsylvania Department of Health County Health Profiles.

Exhibit B4 (a, b, c, d) Health Access Risk

The tables depict population health access risk by ZIP code within each of Penn Highlands hospital's primary service areas. The values represent the distance in standard deviation from the Rural Pennsylvania Mean Health Access Risk value. The tables depict health access risk values (those with positive values) per ZIP code above the state mean value as well as health access risk values (those with negative values) per ZIP code below the state mean value.

Exhibit B4a Health Access PH Dubois

ZIP Code	Penn Highlands - Dubois	County	Population	Health Access Risk z-of-z score
15834	Emporium	Cameron	4533	-.11
16866	Philipsburg	Centre	9881	-03
15801	Dubois	Clearfield	19270	-03
16830	Clearfield	Clearfield	13695	.13
16833	Curwensville	Clearfield	5342	-.10
16838	Grampian	Clearfield	1821	-.28
15849	Penfield	Clearfield	1399	.64
15848	Luthersburg	Clearfield	1027	.59
15757	McGees Mills	Clearfield	1618	.35
16881	Woodland	Clearfield	2232	-.51
16858	Morrisdale	Clearfield	3688	42
15857	St Marys	Elk	13212	-.48
15853	Ridgway	Elk	6578	-.61
15846	Kersey	Elk	3636	-1.07
15823	Brockport	Elk	1431	-.83
15845	Johnsonburg	Elk	3197	-38
15868	Weedville	Elk	1350	-.62
15772	Rossiter	Indiana	1715	1.15
15851	Reynoldsville	Jefferson	6671	.04
15767	Punxsutawney	Jefferson	14668	.28
15825	Brookville	Jefferson	9562	-.24
15824	Brockway	Jefferson	5407	-.14
15840	Falls Creek	Jefferson	1993	-.49
15865	Sykesville	Jefferson	1295	1.06
15864	Summerville	Jefferson	1845	-.64

B4b Health Access Risk PH Brookville

ZIP Code	Penn Highlands - Brookville	County	Population	Health Access Risk z-of-z score
16240	Mayport	Armstrong	1533	-.29
16242	New Bethlehem	Clarion	4693	.16
16214	Clarion	Clarion	10127	.88
16255	Sligo	Clarion	1943	0
15801	Dubois	Clearfield	19270	-03
16239	Marienville	Forest	4172	.70
15825	Brookville	Jefferson	9562	-.24
15860	Sigel	Jefferson	1065	-.29
15767	Punxsutawney	Jefferson	14668	.28
15864	Summerville	Jefferson	1845	-.64
15829	Corsica	Jefferson	1274	-.38

B4c Health Access Risk PH Clearfield

ZIP Code	Penn Highlands - Clearfield	County	Population	Health Access Risk z-of-z score
16866	Philipsburg	Centre	9881	-03
16830	Clearfield	Clearfield	13695	.13
16833	Curwensville	Clearfield	5342	-.10
16881	Woodland	Clearfield	2232	-.51
16843	Hyde	Clearfield	657	1.16
16836	Frenchville	Clearfield	1152	-52
16863	Olanta	Clearfield	718	18
16825	Bigler	Clearfield	240	1.56
16845	Karthaus	Clearfield	1088	-.45
16855	Mineral springs	Clearfield	282	-.11
16837	Glen Richey	Clearfield	186	1.68
16651	Houtzdale	Clearfield	866	.58
16858	Morrisdale	Clearfield	3688	.42
16666	Osceola Mills	Clearfield	2960	.48

B4d Health Access Risk PH Elk

ZIP Code	Penn Highlands - Elk	County	Population	Health Access Risk z-of-z score
15834	Emporium	Cameron	4533	-.10
15845	Johnsonburg	Elk	3197	-.38
15846	Kersey	Elk	3636	-1.06
15853	Ridgway	Elk	6578	-.61
15857	St Marys	Elk	13212	-.48

Exhibit B5: Community Health Resources

Description	Clarion	Clearfield	Jefferson	Elk	PA
HOSPITALS & NURSING HOMES(11)					
General Acute Care Hospitals, 2013-14	**1**	**2**	**2**	**1**	**157**
Hospital Beds Set Up & Staffed, 2013-14	**77**	**274**	**79**	**75**	**32,525**
Beds Set Up & Staffed Per 1,000 Residents	**1.98**	**3.37**	**1.77**	**2.40**	**2.54**
# Nursing Homes, 2014	**3**	**4**	**4**	**2**	**701**
# Total Licensed/Approved Nursing Home Beds, 2014	**323**	**671**	**375**	**258**	**88,063**
Total Licensed/Approved Nursing Home Beds Per 1,000 Residents, 2014	**8.32**	**8.26**	**8.4**	**8.27**	**6.89**
OFFICES OF PHYSICIANS AND DENTISTS(12)					
# Physicians Offices (NACIS 6211), 2013	**30**	**65**	**32**	**22**	**8,887**
# Physicians Offices Per 100,000 Residents, 2013	**76.7**	**79.7**	**71.1**	**69.9**	**69.5**
# Dentists Offices (NACIS 6212), 2013	**12**	**24**	**16**	**8**	**5,169**
# Dentists Offices Per 100,000 Residents, 2013	**30.7**	**29.4**	**35.6**	**25.4**	**40.4**

Sources: Pennsylvania Department of Health (Hospital and Nursing Home data).
U. S. Census Bureau County Business Patterns (Physician and Dentist data).

Exhibit B6: The Penn Highlands Physician Network (LPHPN)

A growing trend in the healthcare industry is the move toward physician employment, whereby physicians become employees of hospitals or health systems, as compared to the traditional independent physician practice with hospital privileges. While rooted in a variety of factors, one clear reason for such a turn is the new physician's distaste for the increasingly complex insurance and regulatory environment in health care. Gone are the days when doctors could just be doctors. The desire of new medical school graduates to want a more traditional work schedule, with traditional hours, coverage, and time off, are also factors fueling this trend. Hospitals and health systems today find it challenging to recruit physicians when they cannot accommodate these needs and wants. At PHH, many of the medical staff are employed by the system. This employment structure provides physicians with a host of management services designed to support their practice as well as meet their needs for a more flexible work environment, with coverage and a guaranteed salary. Thus, PHH has improved its ability to successfully recruit and retain the much need services of physicians into their market.

The current Penn Highlands Physician Network made up of employed physicians at all four PHH campuses is an outgrowth of DRMC physician group practice - the DuBois Regional Medical Group (DRMG). The DRMG originally formed to address physician trends summarized above. The DRMG partially sourced the needed financing for practice start-ups and maintenance by exploiting provisions of the 340B Drug Pricing Program.

The 340B Program was created by Congress in 1992 and mandates that manufacturers provide certain providers with discounts on outpatient drugs as a condition of participating in Medicaid. Certain nonprofit and public hospitals can participate in the 340B Program if they meet the applicable eligibility criteria. Nonprofit hospitals with a high percentage of Medicaid and low income Medicare patients, sometimes referred to as disproportionate share hospitals (DSH), account for 81 percent of total sales volume in the 340B Program. DRMC meets the disproportionate share hospitals (DSH) criteria.

Hospital acquisitions of physician practices serve as one way DSH hospitals can increase their profits from the 340B Program. Medicines prescribed by the physicians in the acquired practice may become eligible for the 340B discount following the acquisition, allowing the hospital to potentially capture the difference between the 340B discounted price and the price paid by the patient or his/her insurer. Specifically, when an independent physician provides drug therapy, the claim submitted to the payer indicates a physician office as the site of care. When a physician practice is acquired by a hospital, the hospital will generally bill for this same care using the hospital outpatient department (HOPD) as the location of care by certifying the practice location as part of the hospital. Effectively, the acquired physician practice may become an integral part of the hospital included on the hospital's Medicare cost report, and therefore may be eligible to participate in the 340B Program. The hospital's enrollment of the acquired physician practices as an additional 340B site creates more opportunity for the hospital to access 340B prices for outpatient pharmaceutical medicines because of the additional patient volume flowing through the acquired practice. 340B providers need to annually attest to their continuous eligibility, but they can enroll new sites in the 340B Program on a quarterly basis. The site-of-care shifts associated with the physician practice acquisition also may lead to higher overall costs of care as services provided in the HOPD setting often have a higher reimbursement than services provided in the physician's office. Not surprisingly hospital acquisitions of physician-based oncology practices are a key driver of 340B Program growth.

Currently, proceeds from the 340B Program, affectionately referred to as the "drug plan" by PHH management, continue to supplement Penn Highlands Physician Network (PHPN) operations. Although for financial and regulatory purposes PHP remains part of DRMC, today for all intents and purposes the PHP functions as an autonomous physician lead organization. Its governance structure includes a board of directors with three key working committees - operations and finance, quality, and electronic medical records. PHPN is an equal partner and integral part of PHH. The chairs of the three PHPN working committees serve as members of the PHH parent board.

Exhibit B7 (a, b, c, d) Hospital Operational Data

Exhibit B7a Hospital Operational Data PH Dubois

Description	2010-11	2011-12	2012-13	2013-14	2014-15
Long Tern Care Unit	No	No	No	No	No
Licensed Beds	214	214	217	219	219
Beds Set Up and Staffed	214	214	217	219	219
Admissions	8655	8031	8057	8335	9240
Discharges	8641	8034	8052	8342	9253
Patient Days of Care	37816	36298	36395	38601	40428
Discharge Days	38056	36358	35953	38092	40312
Bed Days Available	78110	78492	79402	80130	80088
Average Length of Stay	4.40	4.53	4.47	4.57	4.36
Occupany Rate	48.40	46.20	45.80	48.20	50.50
Live Births	933	969	999	1027	1190
Inpatient Surgical Operations	1033	1461	1734	1678	1704
Outpatient Surgical Operations	5752	9165	10583	10682	10188
Total Surgicla Operations	6785	10626	12317	12360	11892
Medical Staff (Board Certified)	98	116	94	162	280
Medical Staff (Other)	26	27	18	22	17
Total Medical Staff	124	143	112	184	297

Exhibit B7b Hospital Operational Data PH Brookville

Description	2010-11	2011-12	2012-13	2013-14	2014-15
Long Tern Care Unit	No	No	No	No	No
Licensed Beds	35	35	35	35	35
Beds Set Up and Staffed	34	34	34	34	34
Admissions	1292	1212	1152	822	984
Discharges	1292	1212	1152	822	975
Patient Days of Care	6061	6245	6048	4839	5972
Discharge Days	6061	6245	6048	4839	5969
Bed Days Available	12638	12574	12410	12606	13282
Average Length of Stay	4.69	5.15	5.25	5.89	6.12
Occupany Rate	48	49.7	48.7	38.4	45
Live Births	0	0	0	0	0
Inpatient Surgical Operations	205	193	149	83	70
Outpatient Surgical Operations	1636	1743	1524	1536	1210
Total Surgicla Operations	1841	1936	1673	1619	1280
Medical Staff (Board Certified)	15	16	12	10	10
Medical Staff (Other)	12	5	7	6	5
Total Medical Staff	27	21	19	16	15

Exhibit B7c Hospital Operational Data PH Clearfield

Description	2010-11	2011-12	2012-13	2013-14	2014-15
Long Tern Care Unit	No	No	No	No	No
Licensed Beds	96	96	96	89	96
Beds Set Up and Staffed	96	96	96	55	50
Admissions	3760	3058	2896	2278	2005
Discharges	3765	3062	2904	2271	2005
Patient Days of Care	15651	13408	13421	10023	9367
Discharge Days	15651	13435	13421	10011	9367
Bed Days Available	35040	36725	36548	23198	19308
Average Length of Stay	4.16	4.39	4.62	4.41	4.67
Occupany Rate	44.70	36.50	36.70	43.20	48.50
Live Births	195	176	197	114	0
Inpatient Surgical Operations	752	701	658	543	418
Outpatient Surgical Operations	4036	4168	3225	3197	2784
Total Surgicla Operations	4788	4869	3883	3740	3202
Medical Staff (Board Certified)	45	41	34	33	37
Medical Staff (Other)	7	3	3	6	6
Total Medical Staff	52	44	37	39	43

Exhibit B7d Hospital Operational Data PH Elk

Description	2010-11	2011-12	2012-13	2013-14	2014-15
Long Tern Care Unit	Yes	Yes	Yes	Yes	Yes
Licensed Beds	80	80	80	80	75
Beds Set Up and Staffed	80	80	75	75	75
Admissions	4021	3822	2992	2506	2477
Discharges	4042	3886	2989	2505	2467
Patient Days of Care	19153	18147	13685	11765	10593
Discharge Days	19142	18315	12507	10784	10549
Bed Days Available	29200	30333	28461	28227	28299
Average Length of Stay	4.74	4.71	4.18	4.30	4.28
Occupany Rate	65.60	59.80	48.10	41.70	37.40
Live Births	188	209	232	209	182
Inpatient Surgical Operations	809	693	639	561	509
Outpatient Surgical Operations	2960	3201	2832	2557	2274
Total Surgicla Operations	3769	3894	3471	3118	2783
Medical Staff (Board Certified)	55	44	51	43	94
Medical Staff (Other)	12	15	19	8	0
Total Medical Staff	67	59	70	51	94

Source: Pennsylvania Department of Health Hospital Statistical Reports.

Exhibit B8 (a, b, c, d) Hospital Quality Data

Exhibit B8a Hospital Quality Data PH Dubois

	Patients Highly Satisfied		Recommended Care		Readmission Composite	
	PH-D	PA	PH-D	PA	PH-D	PA
2014	70.67%	69.33%	99.03%	97.79%	NA	NA
2013	76.00%	68.50%	99.17%	98.55%	17.86%	19.49%
2012	72.00%	66.87%	98.84%	98.23%	18.35%	20.43%
2011	71.75%	65.34%	97.19%	97.67%	19.22%	21.84%
2010	69.75%	64.75%	96.96%	96.25%	NA	NA
2009	68.25%	63.34%	97.16%	95.00%	NA	NA
2008	70.00%	NA	96.45%	94.00%	NA	NA

Exhibit B8b Hospital Quality Data PH Brookville

	Patients Highly Satisfied		Recommended Care		Readmission Composite	
	PH-B	PA	PH-B	PA	PH-D	PA
2014	74.33%	69.33%	85.14%	97.79%	NA	NA
2013	75.00%	68.50%	95.41%	98.55%	18.97%	19.49%
2012	NA	66.87%	92.22%	98.23%	19.42%	20.43%
2011	NA	65.34%	90.00%	97.67%	20.10%	21.84%
2010	NA	64.75%	93.88%	96.25%	NA	NA
2009	NA	63.34%	91.60%	95.00%	NA	NA
2008	NA	NA	88.74%	94.00%	NA	NA

Exhibit B8c Hospital Quality Data PH Clearfield

	Patients Highly Satisfied		Recommended Care		Readmission Composite	
	PH-C	PA	PH-C	PA	PH-C	PA
2014	55.00%	69.33%	95.31%	97.79%	NA	NA
2013	55.00%	68.50%	96.87%	98.55%	20.37%	19.49%
2012	61.00%	66.87%	95.72%	98.23%	21.81%	20.43%
2011	53.00%	65.34%	96.24%	97.67%	23.12%	21.84%
2010	54.25%	64.75%	93.14%	96.25%	NA	NA
2009	56.00%	63.34%	88.49%	95.00%	NA	NA
2008	57.00%	NA	84.31%	94.00%	NA	NA

Exhibit B8d Hospital Quality Data PH Elk

	Patients Highly Satisfie		Recommended Care		Readmission Composite	
	PH-E	PA	PH-E	PA	PH-E	PA
2014	67.33%	69.33%	90.91%	97.79%	NA	NA
2013	64.00%	68.50%	97.81%	98.55%	18.75%	19.49%
2012	51.75%	66.87%	95.13%	98.23%	20.57%	20.43%
2011	49.75%	65.34%	93.22%	97.67%	22.47%	21.84%
2010	51.25%	64.75%	89.18%	96.25%	NA	NA
2009	48.50%	63.34%	88.47%	95.00%	NA	NA
2008	53.00%	NA	87.43%	94.00%	NA	NA

Overall Recommended Care (This measure is a weighted average of all the process-of-care, or "core" measures, reported on CMS Hospital Compare)
Percent of Patients Highly Satisfied (This measure is used to assess adult inpatients' perception of their hospital. Patients rate their hospital on a scale from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible. Highly satisfied 7.0-10.0)
Readmission Composite (Average Medicare hospital 30-day readmission rates for heart failure, heart attack, stroke, VTE, and pneumonia)
Source: WNTB.org (Why Not the Best)

Exhibit B9 (a, b, c, d) Hospital Financial Data

Exhibit B9a Hospital Data PH Dubois

(000's)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Operating Margin	5.36%	4.64%	1.91%	1.23%	-1.07%	-1.81%	-2.21%	0.52%	0.29%
Total Margin	7.99%	6.71%	-1.68%	2.42%	0.12%	-0.42%	-0.65%	4.19%	1.93%
Operating Revenue	$160,628	$176,928	$196,950	$207,095	$211,154	$213,838	$220,568	$236,028	$261,086
Operating Income	$8,607	$8,202	$3,755	$2,540	($2,250)	($3,865)	($4,872)	$1,226	$765
Total Income	$12,834	$11,876	($3,307)	$5,004	$252	($889)	($1,428)	$9,888	$5,037

Exhibit B9b Hospital Data PH Brookville

(000's)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Operating Margin	-5.07%	1.15%	3.68%	1.77%	3.34%	1.31%	-6.49%	-5.97%	1.70%
Total Margin	-4.68%	1.25%	6.89%	2.73%	3.74%	2.24%	-5.83%	-5.62%	6.20%
Operating Revenue	$23,908	$24,840	$27,276	$26,634	$28,687	$26,420	$25,909	$24,888	$26,239
Operating Income	($1,213)	$285	$1,005	$472	$957	$345	($1,682)	($1,485)	$445
Total Income	($1,119)	$311	$1,879	$728	$1,074	$593	($1,510)	($1,399)	$1,627

Exhibit B9c Hospital Data PH Clearfield

(000's)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Operating Margin	0.15%	1.87%	0.06%	-4.01%	-4.22%	-4.95%	-13.30%	-12.96%	-11.11%
Total Margin	3.11%	4.13%	-0.93%	-1.26%	1.02%	-4.34%	-7.69%	-7.32%	-8.91%
Operating Revenue	$67,819	$74,474	$74,563	$68,144	$65,297	$59,306	$51,084	$48,478	$43,638
Operating Income	$104	$1,396	$45	($2,730)	($2,756)	($2,937)	($6,793)	($6,282)	($4,848)
Total Income	$2,109	$3,075	($692)	($857)	$665	($2,573)	($3,929)	($3,549)	($3,890)

Exhibit B9d Hospital Data PH Elk

(000's)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Operating Margin	2.07%	1.33%	4.21%	1.17%	0.38%	3.29%	0.54%	-1.41%	2.92%
Total Margin	3.36%	3.26%	5.30%	2.36%	1.73%	2.35%	2.07%	1.02%	3.92%
Operating Revenue	$58,938	$61,688	$65,606	$70,972	$73,554	$78,873	$72,126	$69,175	$61,131
Operating Income	$1,221	$823	$2,765	$830	$276	$2,596	$392	($973)	$1,782
Total Income	$1,983	$2,008	$3,474	$1,678	$1,274	$1,854	$1,492	$708	$2,399

Source: Pennsylvania Health Care Cost Containment Council.

Exhibit B10 Penn Highlands Healthcare Organizational Structure (2016)

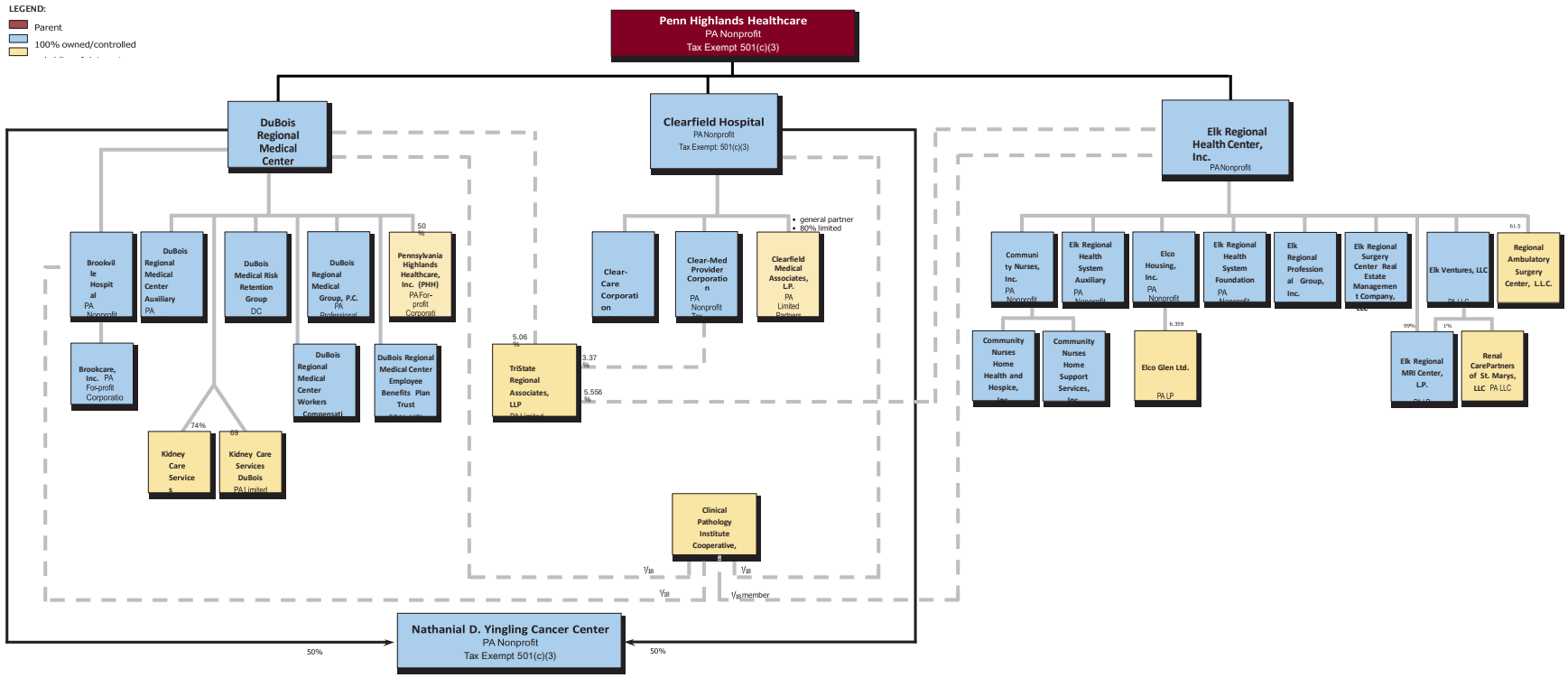
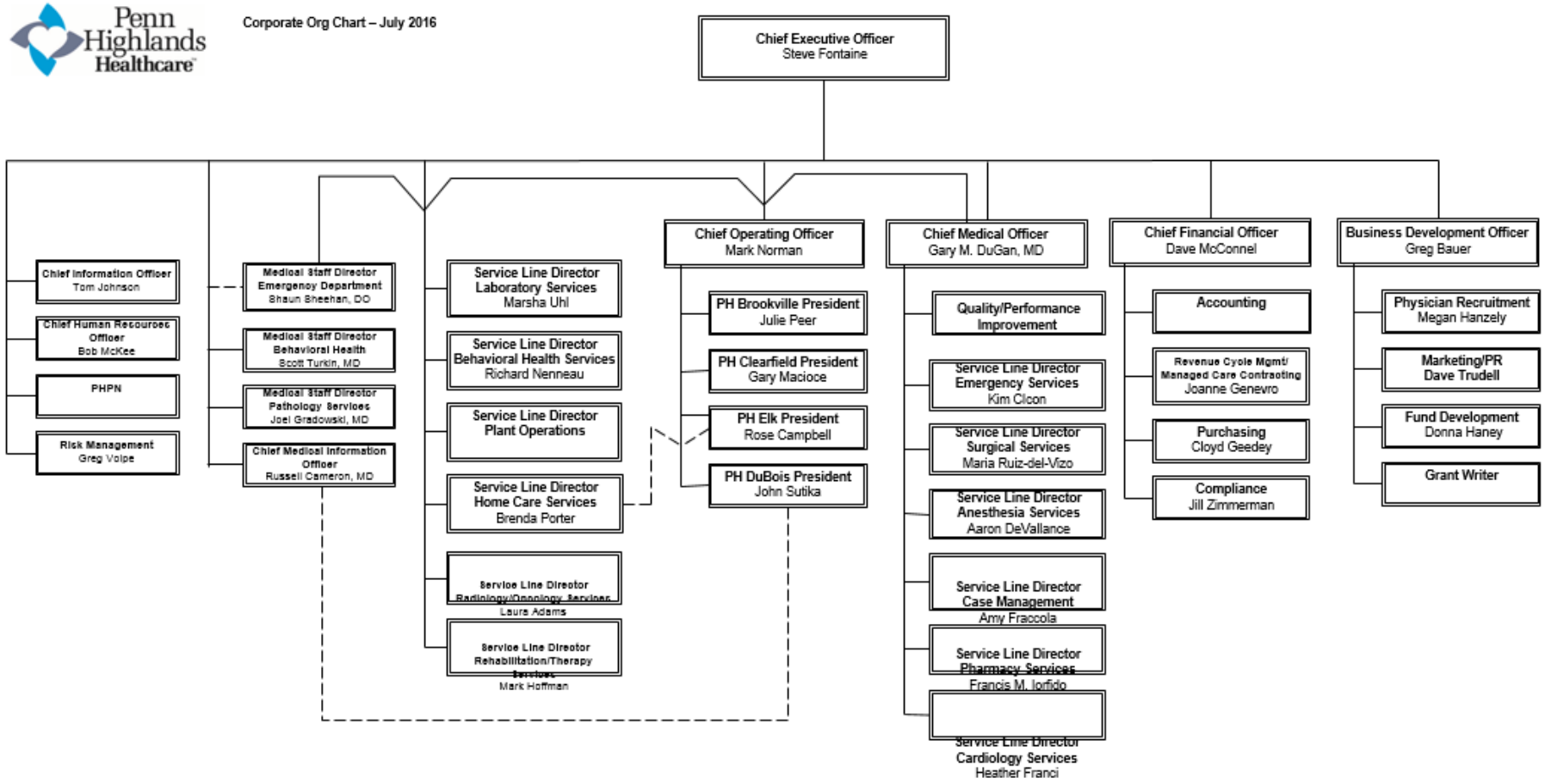


Exhibit B11 Penn Highlands Healthcare Corporate Organizational Chart



Case #5: Tyrone Regional Health Network: A Cross-Sector Collaboration of Community Organizations

Case Summary

The establishment of Tyrone Hospital was made possible by the efforts of numerous community residents, businesses, and social and civic organizations. Notable contributors included Harvey Gray, a prominent Tyrone businessman, and Tyrone's famous son, Fred Waring, who gave a concert in Tyrone to benefit Tyrone Hospital. On September 20, 1954, Tyrone Hospital opened its doors and accepted its first patient. Over one-half century, the hospital provided care to the residents of Blair County. The continuation of these services, however, was in jeopardy when, in 2006, Tyrone Hospital declared bankruptcy. Several factors resulted in this outcome including the retirement of medical staff without replacements, significant declines in service volumes, and a negative outcome of a professional malpractice case that included Tyrone Hospital as a defendant. The transition of senior leadership in 2009 led to the formation and execution of a strategy that resulted in Tyrone Hospital's emergence from bankruptcy shortly thereafter. The strategy was grounded in a new vision for Tyrone Hospital, a vision that positioned Tyrone Hospital as the hub of a network of community health providers.

In June 2014, leaders at Tyrone Hospital announced the Tyrone Regional Health Network (TRHN), a new name that better described the collaborative, community-based healthcare offered through the hospital and all its affiliates across the region. The creation of the TRHN, in the near term, resulted in multiple positive outcomes for the community. TRHN broadened its scope of services, improved service efficiency, and maintained superior quality outcomes. Through its leadership position with the Healthy Blair County Coalition, TRHN also began to address health lifestyle issues concerning the community. In many ways the success of the turnaround and advancement of Tyrone Hospital, now rebranded as TRHN, may be attributed to exceptional organizational leadership. Recent events, however, indicate that TRHN's future success is not necessarily guaranteed. First, after several years of positive financial outcomes during the current decade, TRHN experienced a significant operating loss in 2015. Second, after

reestablishing itself as a viable health network, TRHN entered into partnership discussions with Penn State Health in 2015. These discussions were terminated in May 2016 without reaching an agreement. TRHN today is in a better place than 2006. Yet the network remains at a critical crossroads. Will it be able to sustain recent successes as an independent entity? If not, given the recent setback, will it be able to successfully partner with another regional healthcare system?

The Community Served

The main campus of the Tyrone Regional Health Network (TRHN) is located in the northeastern corner of Blair County in Tyrone, Pa. From this location in Blair County, TRHN provides health services to communities throughout the county. The TRHN service area is primarily white (96 percent) and slightly older (median age of 42.4 years) than the average Pennsylvanian (median age of 40.40 years). Approximately 40 percednt of this population achieved an education beyond high school, compared to 52 percent of those living in Pennsylvania. Likewise, whereas the average Pennsylvania median household income is $72,210, it is $57,130 in the TRHN service area. There is no significant difference in terms of lack of health insurance coverage (9.5 percent and 9.5 percent) or family poverty status (9.39 percent and 9.3 percent) (See Exhibit A-2). A significant proportion of the 139,304 residents currently within the service area reside in Altoona and two other densely populated Blair County communities adjacent to Altoona – Bellwood and Hollidaysburg (See Exhibit A-1). The geography and economic history of the service area in many ways are consistent with those of other Pennsylvania rural communities. Over the last 200 years, the region has experienced economic booms and busts linked to the development, expansion and retrenchment of the railroad industry. With the decline of the railroad industry from its height in the early 20th century, the county has purposely made efforts to expand and diversify its economy. At this time, the distribution across business and industry categories of the civilian employed population over age 16 in the service area mirrors that of the state with minor exceptions. A greater number of individuals are employed in retail services and slightly smaller cohorts in finance/real estate and professional management positions. (See Exhibit A-3).

The Community Health Status, Needs, and Resources

The health status of TRHN service area residents is below the average health status of all those residing in Pennsylvania. This finding is supported by publicly available health behavior, morbidity and mortality data (See Exhibits B-1, B-2, and B-3). This finding aligns with an observation that reveals nearly one-half of the service area residents experience healthcare needs above the needs of the average rural resident in Pennsylvania, and less than average personal economic resources to access care as compared to those available to the average rural resident in Pennsylvania. More specifically, the "health access risk values" for two communities served by TRHN are greater than the average value for all Pennsylvania rural communities. These include Altoona (ZIP codes 16601 and 16602) and Claysburg (ZIP code 16625). The total population within these ZIP codes represents approximately 45 percent of TRNH service area population (See Exhibit B-4). The population healthcare needs of Blair County, and specifically the TRNH service area, have been well documented over time in community health needs assessment reports.[91] Identified needs in these reports align with the characterization of the population, its healthcare status and healthcare access risk described above. Based on the most current needs assessment, identified areas of concern in order of priority include:

- Promoting a Healthy Lifestyle (obesity, physical activity, diabetes)
- Alcohol and Substance Abuse
- Mental Health Needs (Children/ Adolescents)
- Smoking and Tobacco
- Poverty
- Access to Dental Services

The healthcare needs for Blair County, including the current TRNH service area, have been and remain significant. The availability of healthcare services in this rural setting are at or above state averages as measured by acute care hospital bed staffed per 1,000 residents, physician offices per 100,000 residents and dentist offices per 1000,000 residents (See Exhibit B-5). Of course these data do not reveal possible

[91] Community health needs assessments (CHNA) and implementation strategies are newly required of tax-exempt hospitals as a result of the Patient Protection and Affordable Care Act. These assessments and strategies create an important opportunity to improve the health of communities. They ensure that hospitals have the information they need to provide community benefits that meet the needs of their communities. They also provide an opportunity to improve coordination of hospital community benefits with other efforts to improve community health. By statute, the CHNAs must take into account input from "persons who represent the broad interests of the community served by the hospital facility, including those with special knowledge of or expertise in public health."

access barriers to these services including location, temporal and financial barriers (particularly to dental services). In addition, there is insufficient data on the availability of and accessibility to behavioral and mental health services within the county. A relatively small but significant source of care within Blair County is provided by the TRHN–an organization anchored by the Tyrone Hospital (See Exhibits B-6, B-7, and B-8).

A Hospital in Crisis

"We were literally within weeks of closing," admitted a board member, reflecting back to 2006. The story of the rebirth of Tyrone Hospital (TH) as the Tyrone Regional Health Network (TRHN) cannot begin without first addressing its most desperate hour. In the early 2000s, with the closing of an OB-GYN practice, volumes that were steady throughout the 1990s began to decrease. TH was in, what one senior administrator called, a "death spiral." Weakened leadership gave way to poor quality, which weakened the hospital's reputation, thus preventing it from attracting quality physicians; this sequence began to feed on itself. In addition to all of the other factors that challenge small, rural hospitals in the 21st century, TH was included as a defendant in a medical negligence case and forced to pay a significant portion of a $4 million settlement in 2006.[92] In an effort to preserve cash, leaders of TH filed for bankruptcy.

Three years later, in 2009, while still in bankruptcy, conditions at the hospital had worsened. The current CEO "was struggling to figure out what to do," remembered an IT consultant at the time. He was trying to sell the hospital but potential buyers would back out of the deal at the last minute. "Who's going to come and take over a small, bankrupt, nearly cash poor, ready to close hospital?" he remembered thinking. The consultant, familiar with the hospital and hoping to salvage what remained, encouraged the Board to develop a strategic plan. The strategic plan was completed and submitted to the bankruptcy court as part of the hospital's reorganization plan in 2009. The IT consultant, Mr. Stephen Gildea, became TH's new CEO.

[92] In 1995, a gynecologist at TH allegedly acted with negligence as he and others did not act quickly enough to deliver a baby by caesarean section after he stopped breathing while his mother was in labor, which resulted in the baby being born with cerebral palsy.

TH clearly faced several critical challenges as Mr. Gildea assumed his new responsibilities. Maintaining a strong and sustainable financial position was and remains one of the most critical challenges. Specifically, issues with operating cash flow dominate the concerns. Although designation as a Critical Access Hospital (CAH) generates benefit in terms of reimbursement for Medicare services, services provided to medical assistance recipients are reimbursed at the standard rates approved in Pennsylvania for all hospital-based services.[93] These reimbursement levels are well below CAH costs. Opportunities to offset these losses occur through an annual supplemental appropriation to CAHs that requires approval by the state legislature. As TH's CEO pointed out, "almost every critical access hospital is in the hole until that money comes through." And in times of state budget challenges, reimbursements can be both delayed and reduced, making it difficult for a hospital to plan and budget for the future. In a letter to Pennsylvania Governor Tom Wolf, dated January 6, 2016, TH CEO Gildea expressed his concerns as they related to the CAH funding in the state budget.

> As the Chief Executive Officer of Tyrone Hospital, I want you to know how devastating your continued lack of support for the Medicaid Supplemental Funding for Critical Access Hospitals will be for thousands of residents and children in Pennsylvania...The lack of this funding will also force Tyrone Hospital and other small hospitals in the state to eliminate programs and the staff that support these programs. Some of the hospitals may be forced to close. Thousands of jobs will be lost and access to what is very affordable and high quality patient care will be impacted.

The hospital was also challenged by its own culture. A collaborative healthcare partner with intimate

[93] Critical Access Hospital (CAH) is a designation given to certain rural hospitals by the Centers for Medicare and Medicaid Services (CMS). This designation was created by Congress in the 1997 Balanced Budget Act in response to a string of hospital closures in the 1980s and early 1990s. The primary eligibility requirements for a CAHs are: it must have 25 or fewer acute care inpatient beds. It must be located more than 35 miles from another hospital (exceptions may apply). It must maintain an annual average length of stay of 96 hours or less for acute care patients. It must provide 24/7 emergency care services. It receives cost-based reimbursement from Medicare. As of January 1, 2004, CAHs are eligible for allowable cost plus 1% reimbursement. In Pennsylvania, CAHs do not receive cost plus reimbursement for Medicaid services. In place of cost reimbursement, CAHs are supported by an annual supplemental appropriation approved at the discretion of the state legislature.

knowledge of TH's history described this period as one lacking a "terra firma," a stable and familiar ground. Within the community, TH had a poor perception of quality; it had lost the trust of its community. Closer to home, however, morale among hospital staff also suffered. "We had to win over our employees," explained a board member. "When I first joined the board, they wouldn't even speak to me when I walked down the hall," she continued. "The morale was so poor, and they had so much distrust for the board; they felt the board was responsible for getting them into bankruptcy."

TH's CEO began to strategically reshape the culture of the hospital. He "set a very distinct tone of accountability, efficiency and pride," a collaborative healthcare partner remembered. "And many people found the door," especially those who did not wish to commit to the ideas of hard work. Almost every senior leadership position at the hospital turned over. To improve morale, the board started showing its appreciation of employees through dinners and lunches and other special events; it would even bring in food and snacks for third-shift employees. In addition to these gestures of goodwill, the culture of the TH was also greatly influenced by the temperament and leadership style of its CEO. The terms "grit and perseverance" were also used to describe the CEO's motivation to change the perception of the hospital in the eyes of the community. Unlike larger health systems where communication is characteristically top-down and power/control is a commodity shared only by a select few, TH's CEO had, as one healthcare collaborator said, "a very genuine or tactful way of approaching people. There was mutual respect going back and forth. Some would see that as a surrendering of control or power," he admitted. "I would argue it's quite the opposite."

To change community perception, TH pursued quality improvement. By documenting and communicating TH superior care in terms of clinical quality and personal attention, it was hoped patient confidence could be restored and efforts at physician recruitment would improve. As an initial step in this direction, the CEO recruited and contracted a hospitalist known for quality care. He believed this to be the first critical step in reversing the hospital's fortunes. This initial action was followed with the creation of

a Director of Performance Improvement position. With the director in place, TH could now measure the quality of its healthcare, both as a way to monitor conditions, but also, and most importantly, as a way to improve conditions. TH healthcare quality is measured and monitored in the following ways:

1. Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)[94] with patient satisfaction surveys.

2. Core Measures with meticulous monitoring of all patient care to maximize patient outcomes.

3. Reviews of all infections (surgical, Foley catheters, central lines, etc.) and hospital recidivism though the National Hospital Safety Network (NHSN) measures.

4. Review of mortality rates through Pennsylvania Healthcare (PHC4)

5. Center for Medicare Services (CMS) guidelines

TH's commitment to quality, as evidenced in its actions and hard work, paid off. TH now possesses a number of the best HCAHPS scores in the state (See Exhibit B-7). The public perception of TH also improved.

From Hospital to Health Network

As the hospital actively worked toward its quality goals, and in the process the restoration of the institution's public image, the new CEO pursued a vision for TH which positioned the hospital as the hub of a network of community health providers including both primary care, specialty care and ancillary care services. Network development efforts were often planned, but on other occasions, they simply evolved. The relationships with partners differed, ranging from informally structured community collaborative organizations to joint ventures.

[94] HCAHPS (the Hospital Consumer Assessment of Healthcare Providers and Systems) is a patient satisfaction survey required by CMS (the Centers for Medicare and Medicaid Services) for all hospitals in the U.S. The survey is for adult inpatients, excluding psychiatric patients.

By 2013 network development efforts had reached a point that the TH CEO pushed for a new logo, a new image, one that captured an organization of collaborative relationships. The name Tyrone Regional Health Network (TRHN), with its circle-in-motion logo, did just that. In June 2014, TH leaders followed through and officially announced the name change to Tyrone Regional Health Network (TRHN). "We are much more than a hospital," wrote the CEO in a newsletter article for The Office of Rural Health in the Spring of 2014.

> We have become a network of organizations that are working in a collaborative manner to not only provide high-quality healthcare, but also services and programs that are aimed at keeping people healthy and preventing illness and disease...The hospital has focused on building collaborative relationships with large healthcare systems and other small, local providers to gain the economies of scale needed to maintain operational efficiencies and provide well-integrated healthcare services across the continuum of care.

The newly named TRHN now includes Tyrone Hospital, a 25-bed, general, medical, and surgical community hospital, with 24-hour emergency care, a wide range of outpatient testing and services, inpatient care and an intensive care unit; the Breast Cancer & Women's Health Institute; an Orthopedic Center of Excellence in partnership with University Orthopedics Center; physical, occupational and speech therapy services in partnership with ProCare, PT, LP; the Tyrone Fitness and Wellness Center; Davita kidney dialysis services; occupational medicine services in partnership with Mount Nittany Health; and We Care Therapy Services. TRHN offers primary care services through several primary care offices located on the TRHN campus in Tyrone, in Houtzdale, and in the Pinecroft area of Altoona. TRHN works closely with the independent physicians on the TH medical staff and serves as the lead organization for a community health collaboration, the Healthy Blair Health Coalition.

A more detailed summary of several of the key network development initiatives is provided below, beginning with the effort to improve and increase the scope of physician services.

Quality Care Network, LLC

Approximately 30,000 potential patients are located within a 20-mile radius around TRHN. TRHN has one major competitor: UPMC Altoona, which is located just 18 miles away. Altoona is geographically the center of healthcare and retail in the Altoona-Blair County market. Patients seeking care, especially from specialists, must often travel an extensive distance to Altoona. The location of TRHN in northern Blair County thus created a small competitive advantage – one which the TRHN CEO hoped to exploit through the development of a network of health services strategically located within the county and associated with the hospital. The TRHN CEO realized that improving the hospital image created the window of opportunity for success, but this success would not be realized without an engaged and active medical staff. Seeing an opportunity, senior administrators at TRHN organized an Independent Physician Association[95] and called it Quality Care Network[96]; their intent was to harness all of the remaining independent physicians in their market and put them under the TRHN umbrella, thus drawing both referring physicians and patient volume away from UPMC. "We cauterized it," quipped a senior administrator, referring to the patient volume that UPMC had become accustomed to in previous years. UPMC employs all of its physicians and is considered a closed shop. TRHN, on the other hand, while employing some physicians (a hospitalist and seven primary care physicians), created an efficient, effective and affordable model to achieve network goals. The Quality Care Network provides the TRHN an affordable alternative to employed physicians; it associates physicians within a market and enables them to capitalize on shared services, pooled resources and medical synergies while simultaneously

[95] An independent physician association (IPA) is a business entity organized and owned by a network of independent physician practices for the purpose of reducing overhead or pursuing business ventures such as contracts with employers, accountable care organizations (ACO) and/or managed care organizations (MCOs). There are substantial opportunities for innovation in delivery system modeling and benefit design in the creation of physician networks. Specifically, creation of practice networks involving patient-centered medical home (PCMH) practices may accelerate important and necessary changes in healthcare delivery.

[96] The Independent Physician Association (IPA) called Quality Care Network, LLC, was founded in early 2016 with seven founding members. The initial goal was to provide shared services to some of the member groups and extend services out to small independent physicians, providing such things as biohazardous waste contracts to health benefit plans. The group consists of 120 physicians whose practices include over 600 employees. "The founding members of the IPA are the most efficient and effective groups in this region," stated the TRHN CEO. Only those physicians who have low readmission rates and high quality care are invited to join.

keeping them independent and flexible; and it gives TRHN a diverse medical staff they can now call their own, marketing new services to the community through the TRHN.

Primary Care Services

As a critical access hospital, TRHN established two rural health centers in Tyrone and Houtzdale, Pa., and acquired an existing primary care practice in the Pinecroft area of Altoona.[97] Reaching further, TRHN supports and manages Glendale Medical, an FQHC in Coalport, Pa. The FQHC's service area extends into Clearfield County. TRHN is also associated with a physician in Phillipsburg, Clearfield County, and supports an office building in northern Altoona that helps draw patients to the TRHN.

The Tyrone Fitness and Wellness Center

The center is an important component of the network. The Tyrone Fitness and Wellness Center includes a membership fee-based fitness center open to the community. The center also leases professional office space to a wide array of medical specialties, which include physical and occupational therapy, orthopedics, cardiology, ophthalmology, podiatry, obstetrics and gynecology, otolaryngology, and primary care. The center also serves as the home of The Breast Cancer and Women's Health Institute of Central Pennsylvania. ProCare, a physical therapy company, collaborated with TRHN in building and staffing the center and has been an instrumental partner in TRHN's growth and development. In conceptualizing the center, TRHN's CEO wanted to capitalize on the growing trend of offering healthcare services through a retail model where concentration of services and ease of access were front and center. "Here on this campus," he said, "you drive up, walk in the door, and you're at your provider. The intent was to create a retail storefront type of look," he continued, "where the parking lot would just be bustling every day, and it is."

[97] The primary benefit of rural health clinic (RHC) status is enhanced reimbursement from Medicare and Medicaid. Medicare reimburses RHCs based on allowable and reasonable costs. There are two types of RHCs: independent RHCs and provider based RHCs. Provider based RHCs work as a department of another provider, such as a CAH, providing healthcare services to the same population. Provider based RHCs are not subject to a payment cap if the parent entity is a hospital with fewer than 50 available acute care beds (not licensed beds). Provider based RHCs are reported on the main provider's cost report as a department of that provider. As a result, overhead is allocated to the RHC through the step-down overhead allocation process in the same manner that impacts all of the provider's patient care service departments. *Critical Access Hospital Finance 101, NRHRC, p. 8.*

The Orthopedic Center of Excellence

Another part of TRHN's overall strategy was to position itself as something special within the region. To this end, TRHN collaborated with University Orthopedics in Altoona to provide the wellness center with an orthopedic physician component. "We used its brand name to get a little bit of a halo effect over this place," the CEO admitted, "and started to build a little bit of reputation." Within a short period of time, TRHN has become, what the CEO has called, a "boutique hospital for orthopedics." The volume of joint replacements has increased over time. To strengthen its position as a quality care hospital, TRHN converted to private rooms with HD TVs and recliners for comfort. When describing the personal attention given to patients at the hospital, the CEO used the word "concierge" to describe the level of service and the orientation of care. As a small, rural hospital, though, TRHN cannot be everything to everybody. "We have a niche," the CEO explained, "and we're focusing on some specialties." The opportunity for TRHN to grow in this direction came as a result of several perceived challenges facing UPMC Altoona: mainly, its struggle to offer high quality care, and some signs and rumblings of compromised employee morale. "You want to be the easiest to do business with," instructed TRHN's CEO. "You want to be the path of least resistance." For patients and physicians, TRHN offered just this. Physicians are choosing to bring work to TRHN because the operating room staff is friendly and efficient, and there is an overriding goal of quality care throughout the hospital.

Occupational Health

TRHN also reached out to local industry in hopes of building stronger relationships. TRHN's CEO wants the hospital to be considered a provider of choice for some of the 4,000 employees, and families of employees, working in Blair County. The first program created is an occupational health/workplace wellness program aimed at caring for injured employees. Formed as a coalition of ProCare, University Orthopedics, and a national company, Lytle EAP, this program, which now serves up to 14 separate businesses, began with an 1-800 number that injured employees could call and speak with an orthopedic case manager, and if need be, schedule a same-day appointment for care. Today, nurses from TRHN visit

selected workplaces throughout the week, following up on any workplace related healthcare needs. And when needed, in a post-surgical, workplace related injury situation, the hospital will dispatch a therapist to the workplace to help the employee get reacclimated. These relationships, according to the TRHN CEO, have had a direct benefit.

> We're just trying to pull together all of these partners, business partners, like ProCare, University Orthopedics and Lytle EAP. And it benefits us. Our worker's comp volume has grown over the past couple of years significantly. The companies are sending more serious injuries here to our emergency room now and people are having their orthopedic surgeries here, so it's helped to build the hospital, our footprint, and our reputation.

Community Health Coalition

In response to the need for improved health promotion initiatives, TRHN created the Healthy Blair County Coalition (HBCC). It is "an active collaboration of individuals and organizations working to promote the social, economic, emotional, and physical well-being of area residents."[98] The purpose of HBCC is to "share resources, engage local partnerships, and implement strategies and programs to make a difference in the lives of people in the community." The HBCC is the central point for three health-related initiatives: a county-wide community health needs assessment, of which TRHN plays an integral role; a workplace wellness program; and Let's Move Blair County, a Michelle Obama inspired program aimed at improving the health of young county residents. Within workplace wellness, the hospital prides itself on establishing and coordinating the Fitness Challenge for area workplaces. Now in its fourth year, and with participation from two other hospitals in the area – UPMC Altoona and Nason Hospital – the Fitness Challenge program has grown to 12 companies, encompassing up to 400 employees. Styled on the NFL Super Bowl, participating workplaces in Blair County are divided into three conferences--southern, central and northern—and compete with each other to lose the most weight per company, per conference. There is even a large trophy that gets passed around to companies in the winning conference each year. Last year, companies lost a total of 3,000 pounds.

[98] http://healthyblaircountycoalition.org; Accessed on November 23, 2106.

In addition to physical health improvements, TRHN, in collaboration with ProCare and an employee assistance program from the LIDO group, created Workplace Wellness Solutions (WWS). The intent was to support employers by supporting their employees. Given the large number of heavy industry employees in the county, WWS designed an "industrial athletes" program that teaches proper stretching and lifting techniques. "It's a strategy to build relationships and support these companies," the TRHN CEO admitted, "because if these companies are stronger financially, then we will be stronger financially, and having a strong hospital just helps the whole economic picture of the area."

Improving healthy lifestyles has been TRHN's primary community outreach focus. In addition to the workplace-based initiatives, TRHN has also participated in Highmark and Blue Cross/Blue Shield's Silver Sneaker Program, in collaboration with Blair County Senior Services, and offers the fitness center – and specific health classes – at no cost to members of participating insurances. School-based initiatives are another extension of TRHN's commitment to community health. TRHN uses its Outreach Coordinator, a Registered Nurse and Certified Health Coach, to visit the schools and identify healthcare needs. She is currently coaching a student and his family, who are all challenged by obesity, to restructure their lifestyle to include physical activity and healthy food choices. The Wellness Awareness Circuit (WAC), a school-based program developed by the same Outreach Coordinator, allows all students to get "up close and personal" with visuals of how human bodies are impacted by disease (obesity, cancers, etc.).

Two other significant initiatives are TRHN's Voucher Program and WeCare, a health service supporting children with disabilities. The Voucher Program, supported largely by donations from the community, aims to assist breast cancer patients who have trouble meeting certain financial obligations, from copayments to rent payments. To date, they have collected $80,000 to assist breast cancer patients in need. The WeCare story exemplifies TRHN's commitment to community health. Eastern Seals of Central Pennsylvania, located in Altoona, decided to close without any plan to transition the care of children to

another facility. UPMC Altoona expressed no interest in continuing service. In an effort to express good will, TRHN and ProCare stepped in, established a foundation, and were awarded the property and land, which had been donated under the conditions that it be used to assist children with disabilities. While TRHN provides some funding, a significant portion of the operating budget comes from community donations. "We went from closing the doors," reported a ProCare administrator, "to a thousand visits a month of kids with autism. I can't describe to you the goodwill that [TRHN] has gained throughout the region," he continued. "That's a great human interest story." The WeCare initiative was never considered a chance to improve the economic condition of TRHN but rather "it's an opportunity for [TRHN] to go into the heart of Altoona," explained a ProCare administrator, "and, under the heading of goodwill, do what UPMC Altoona wouldn't; that is, take care of those kids." Through partnerships and collaborations, TRHN has been able to make positive impacts upon the health of their community, and in turn, has rebuilt its reputation as a trusted and respected, quality healthcare organization.

Accountable Care Organization

TRHN's efforts to strengthen the organization through networking and collaboration extended beyond the immediate community. Aware of fundamental financing and reimbursement changes in play within the healthcare industry, in 2015, TRHN became a participating member of an accountable care organization, the Physicians Accountable Care Solutions LLC (PAC).[99] [100] Participation as a member of PAC provided an unexpected benefit. Input of clinical data by TRHN into the PAC electronic information system, and more importantly, the ability to access this data in a format that meets the Centers for Medicare and Medicaid Services (CMS) physician quality reporting system (PQRS) requirements, provided TRHN with

[99] An ACO is a group of doctors and healthcare providers who voluntarily work together with Medicare to deliver high quality service to Medicare Fee-for-Service beneficiaries. An ACO is not a Medicare Advantage plan or an HMO. According to the Centers for Medicare and Medicaid Services ("CMS"), the Medicare Shared Savings Program ("MSSP") was established by section 3022 of the Affordable Care Act. The Shared Savings Program is a key component of the Medicare delivery system reform initiatives included in the Affordable Care Act and is a new approach to the delivery of healthcare. Congress created the Shared Savings Program to facilitate coordination and cooperation among providers to improve the quality of care for Medicare Fee-For-Service (FFS) beneficiaries and reduce unnecessary costs. Eligible providers, hospitals, and suppliers may participate in the Shared Savings Program by creating or participating in an Accountable Care Organization (ACO)

[100] PACS is one of the largest Accountable Care Organizations ("ACO") in the United States, spanning more than 10 states and serving more than 120,000 beneficiaries.

a way to avoid impending Medicare financial penalties linked to noncompliance with reporting requirements.[101]

From Health Network to Regional Health System

One of TRHN's benefits is its size. "Small hospitals can be leaders," the CEO declared. One of the benefits of being a small hospital, he continued, is that "you can quickly get your hands on quality issues." As an example, Allegheny Health Network sent a team from its hospital to visit TRHN to learn more about the efficiency of its total joint program. TRHN, within only a few hours, had patients through the OR, into post-op recovery and into beds; whereas, with Allegheny, this process took an entire day. "That affected their length of stay and quality and satisfaction," explained TRHN's CEO, referring to the patients' overall experiences, and therefore, the perceived healthcare quality of TRHN.

And while size may work as an advantage when it comes to quality of care and efficiency in its daily operations, it also creates a great challenge in financing, developing, and maintaining the resources and capabilities needed to sustain success in a rapidly changing healthcare environment, one that increasingly demands healthcare providers to assume greater responsibility for the overall health of the populations they serve. Anticipating these increasing pressures, in 2014, the TRHN Board and CEO engaged Juniper Advisory, a consulting firm specializing in preparing the sale of hospitals or health systems or facilitating partnership transactions. As stated on its website:[102]

> The consolidation trend in hospital and health systems continues. At this time, horizontal consolidation (hospital to hospital combinations) is keeping pace with vertical consolidation

[101] The Physician Quality Reporting System (PQRS) is a quality reporting program that encourages individual eligible professionals (EPs) and group practices to report information on the quality of care to Medicare. PQRS gives participating EPs and group practices the opportunity to assess the quality of care they provide to their patients, helping to ensure that patients get the right care at the right time. By reporting on PQRS quality measures, individual EPs and group practices can also quantify how often they are meeting a particular quality metric. In 2015, the program began applying a negative payment adjustment to individual EPs and PQRS group practices who did not satisfactorily report data on quality measures for Medicare Part B Physician Fee Schedule (PFS) covered professional services in 2013. Those who report satisfactorily for the 2016 program year will avoid the 2018 PQRS negative payment adjustment.

[102] http://www.juniperadvisory.com/preparing-a-hospital-or-health-system-for-sale-or-partnership-transaction/. Accessed on November 30, 2016.

> (hospital acquisitions of ancillary providers and physician groups). To address perceived inefficiencies and quality of care issues, hospitals are attempting to form larger enterprises to create scale, expand geographically, manage risk, access capital, contend with the changing regulatory environment and to more effectively manage the health of the populations they serve. Despite the trend toward consolidation, completing hospital consolidation transactions is more challenging than ever as demonstrated by an alarmingly high failure rate. Over the past several years, about 25 percent of announced partnerships have failed after the signing of a letter of intent and before close. A "busted deal" may cause economic harm and operating disruption to all involved.

Following the consultation, TRHN began to actively seek a healthcare partner. At first, TRHN CEO sought to develop a clinically integrated network with Altoona Hospital, but its sale to UPMC ended any interest in working collaboratively with TRHN. TRHN then identified Mt. Nittany Hospital, in State College, Pa., and began discussions with it about creating a healthcare partnership. Ultimately, however, TRHN believed that the newly created organization, Penn State Health, which now included both Hershey Medical Center and the Medical College at Penn State University, would make a better partner, as Mt. Nittany would eventually, it was believed, join Penn State Health in the future. The new Penn State Health, a subsidiary of Penn State University, was created as a way to organize a community hospital network, one that supported an independent, but clinically integrated, healthcare provider, and this appealed greatly to TRHN. "Just think about putting the name Penn State in front of this building," reasoned one board member. "I mean this is a Penn State community. Everybody loves Penn State here. And not only that," they continued, "this community is a bedroom community for Penn State." Not surprisingly, given TRHN Board sentiment, TRHN signed a letter of intent in July 2015 to become a member of Penn State Health. TRHN leadership anticipated that the alliance would provide TRNH with access to clinical, technical and financial resources that would help improve TRNH's ability to provide service to its community. It was also expected that economic benefits to the region would be significant. The anticipated benefit realized by Penn State Health by moving forward with the partnership was best expressed by the TRHN CEO in straightforward terms.

> We created the network and that elevated us in stature a little higher and it increased our value to others in this region. And that's why Penn State is interested in us because of our role and our position in this market to serve their Penn State employees is pretty strong. We are low cost, high quality. That's what we need to be as healthcare providers in the future.

As the due diligence proceeded it was determined that the suitable legal structure between the two organizations would be a member substitution arrangement. TRHN would be a member of Penn State Health, and Penn State Health would be a sole member of TRHN. The TRHN Board would stay intact. The Board would consist of nine members, three named by TRHN, the remaining names suggested by TRHN but required Penn State Health's approval. Challenges to the partnership related to deeds, property lines, and The Wellness Center ownership arose during the due diligence process but were expected to be resolved. During the negotiation period, there was an unexpected occurrence when the TRHN CEO Gildea resigned to pursue other opportunities. Despite the transition in TRNH leadership, discussion continued with Penn State Health. But as suggested by Jupiter Advisory, the successful completion of a partnership agreement is far from a certainty. In May 2016, Leaders at TRHN announced that the discussions between TRHN and Penn State Health (PSH) had discontinued. In an abbreviated statement, TRNH leadership acknowledged that both organizations shared similar philosophies but mutually believed that an affiliation at this time was not appropriate.

Discussion: Community Health Outcomes and Impacts

A conclusive assessment of TRHN's success requires an examination of achievement in four separate but related goals: First, did the partnering of community healthcare professionals with TH to form TRHN result in increased rural community health care capacity and positive changes in community's health status? Second, were investments made to increase health care capacity based on a documented community need? Third, are new methods of health care delivery in line with recommended rural health practices? And fourth, did the development of TRHN improve quality, service efficiency, and accessibility?

Goal #1

There is strong evidence to support TRHN success in meeting the health capacity objective of the first goal, at least for several years. More specifically, by structuring a varying array of agreements with key community healthcare providers, TH, supported by its medical staff, increased rural community healthcare capacity by expanding the scope of services such as The Breast Cancer and Women's Health Institute of Central Pennsylvania, and the Orthopedic Center of Excellence.

Although there is clear evidence of increased community capacity, as has been our experience in other cases, there is no documented direct evidence of improved community health status. But there are reasons to be optimistic about the ability of the varying partnerships to improve health outcomes for identified groups of patients as well as positively impact overall community health. This belief is based on two separate but related observations. First, TRHN actions have been directed at improving the health status of an identified population within the service area. TRHN's successful establishment of two rural health centers and its management of an FQHC clearly address the healthcare access needs of the community, especially those most disadvantaged. Second, TRHN's formation of the Healthy Blair County Coalition helps ensure communication and coordination of care across all of Blair County's health and human service providers. This creates the foundation for coordinated programming designed to positively impact population health concerns. Related to this community initiative, TRHN's effort to partner in a population health enterprise, the PCA ACO, demonstrates TRHN willingness to assume greater accountability in a proactive manner over time for overall community health.

Goal #2

Aware of the primary community concern around limited healthy lifestyles opportunities documented in Community Health Needs Assessment reports, TRHN initiated actions that extended beyond traditional strategies to solely improve hospital performance. The establishment of the Tyrone Fitness and Wellness Center and the activities of the Healthy Blair County Coalition are evidence of TRNH commitment to the

improvement of community health. Reservations concerning the ability of TRHN to sustain success in meeting the first objective include: a significant reversal of financial performance in FY 2015 (most recent public data available) and the failure to reach an affiliation agreement with Penn State Health.

Goal #3

TRHN supports and manages an FQHC called Glendale Medical in Coalport, PA. FQHC's, while not a specific recommended rural health practice, are, themselves, efficient vehicles to house and deliver healthcare to rural residents, many of which lack insurance and who are generally not affiliated with a primary care physician.

Goal #4

In 2009, under the leadership of Mr. Gildea, Tyrone Hospital emerged from bankruptcy. The turnaround strategy was initially driven by efforts to markedly improve the hospital's service quality. As a network, TRHN improved service efficiency and maintained superior quality ratings. As an initial step in this direction, the CEO recruited and contracted a hospitalist known for quality care. He believed this to be the first critical step in reversing the hospital's fortunes. This initial action was followed with the creation of a Director of Performance Improvement position. With the director in place, TH measured the quality of its healthcare, both as a way to monitor conditions, but also, and most importantly, as a way to improve conditions. These changes helped to increase hospital service volumes, particularly surgical procedures, which inevitably benefited financial performance, allowing TH to sustain operations. This is evidenced by the improving financial outcomes at least through FY 2014 (See Exhibits B-6, B-7, and B-8).

To increase the accessibility of healthcare services, TRHN offers primary care services through several primary care offices located on the TRHN campus in Tyrone, in Houtzdale, and in the Pinecroft area of Altoona. The Quality Care Network provides the TRHN an affordable alternative to employed physicians; it associates physicians within a market and enables them to capitalize on shared services,

pooled resources and medical synergies while simultaneously keeping them independent and flexible. Thus, the Quality Care Network creates service efficiencies for both the network and for patients of TRHN.

Lastly, FQHCs historically provide greater access to healthcare services, especially for those socially and economically disadvantaged populations. They often have more accommodating hours of operation, accept Medicaid, and take patients who do not have a primary care physician.

Closing Remarks & Lessons Learned

As summarized above, TRHN networking activities in the near term resulted in positive outcomes across multiple measures. In reflecting on the determinants of success, the one that continually rises to the top is organizational leadership. TH was fortunate to have the right person in place at the right time. Tyrone Hospital's CEO articulated a vision for the organization; effectively created a strategy to realize the vision; and, most importantly was able to execute on the strategy. TRHN today is in a better place than it was in 2006, as TH. Yet TRHN remains at a critical crossroads. Will it be able to sustain recent successes as an independent entity? If not, given the recent setback, will it be able to successfully partner with another regional healthcare system?

Appendix A

The Community Served

Exhibit A-1 Population Density

The table depicts population density by ZIP code within TRHN primary service areas. The values represent the distance in standard deviation (77 per square mile) from the Rural Pennsylvania Mean Population Density per Square Mile (110 per square mile). The table depicts community with population densities per ZIP code that vary widely with significant population concentrations in the Altoona and Bellwood ZIP codes.

ZIP Code	Description	County	Density per Sq Mile (2010)	Square Miles	Population	Z Score Based on Mean Rural Pa. Density
16601	Altoona	Blair County	391	86.51	33870	3.90
16602	Altoona	Blair County	1997	14.80	29554	26.22
16641	Altoona	Blair County	154	16.86	2598	0.61
16617	Bellwood	Blair County	1728	1.62	2806	22.48
16625	Claysburg	Blair County	121	32.05	3868	0.15
16650	Claysburg	Blair County	45	44.92	2036	-0.91
16655	Claysburg	Blair County	46	34.90	1601	-0.89
16659	Claysburg	Blair County	167	1.81	303	0.79
16664	Claysburg	Blair County	52	40.86	2104	-0.81
16667	Claysburg	Blair County	82	16.96	1392	-0.39
16670	Claysburg	Blair County	296	0.16	47	2.58
16631	Curryville	Blair County	150	0.60	90	0.55
16635	Duncansville	Blair County	199	56.78	11321	1.23
16637	East Freedom	Blair County	153	18.75	2873	0.59
16648	Hollidaysburg	Blair County	270	57.59	15538	2.22
16662	Martinsburg	Blair County	102	59.09	6040	-0.11
16665	Newry	Blair County	740	0.40	299	8.75
16673	Roaring Spring	Blair County	178	31.05	5519	0.94
16682	Sproul	Blair County	544	0.22	117	6.03
16686	Birmingham	Blair County	100	135.12	13488	-0.14
16693	Ganister	Blair County	56	74.91	4185	-0.75

Exhibit A-2 TRHN Service Area Socio-Economic Data

		16601	16602	16641	16617	16625	16650	16655	16659	16664
Description	Description	Altoona	Altoona	Altoona	Bellwood	Claysburg	Claysburg	Claysburg	Claysburg	Claysburg
Population		33,654	29,581	2,598	2,806	3,858	2,036	1,601	303	2,104
Gender:	Male	49.90%	48.80%	50.30%	51.90%	47.70%	50.10%	49.40%	48.20%	50.30%
	Female	50.10%	51.20%	49.70%	48.10%	52.30%	50.00%	50.60%	51.80%	49.70%
Age:	Median	38.9	41.6	41.3	40.7	42	42	40.9	41.9	37
	18 years and under	21.10%	21.30%	21.60%	23.60%	23.80%	22.60%	22.30%	20.50%	30.50%
	65 years and over	16.40%	18.30%	14.50%	18%	14.50%	16.20%	15.50%	19.80%	13.20%
Race/Ethnicity	White	94.10%	95.20%	98.80%	98.30%	97.80%	98.40%	98.90%	98.70%	98.80%
	All Others	5.90%	4.80%	1.20%	1.70%	2.20%	1.60%	1.10%	1.30%	1.20%
Education	Less than High School	9.10%	11.20%	8.20%	8.80%	54.90%	14.90%	13.70%	12.40%	13.90%
	High School	50.60%	48.40%	58.20%	48.20%	18.60%	57.70%	55.60%	48.30%	50.70%
	Above High School	40.40%	40.60%	33.60%	42.90%	26.50%	27.40%	30.60%	39.40%	35.40%
Personal Income	Mean Household Income	$51,332	$51,841	$52,115	$49,249	$46,314	$53,650	$55,108	$49,931	$67,399
	Per Capita Income	$20,961	$21,936	$59,924	$21,900	$18,709	$58,973	$65,034	$64,487	$23,608
Unemployment	Unemployment Rate	4.70%	4.60%	3.40%	4.00%	4.60%	7.40%	3.00%	0%	4.20%
Health Insurance	Public Health Insurance	38.90%	44.10%	34.70%	35.30%	44.70%	29.80%	30.60%	36.70%	30.90%
	No Health Insurance	9.80%	11.80%	10.90%	6.30%	7.40%	9.50%	6.90%	1.40%	19.00%
Poverty Status	Family	11.90%	10.50%	12.40%	5.10%	18.50%	12.40%	6.90%	6.50%	10.60%
	Individuals	19.90%	16%	16.20%	8.00%	21.10%	14.80%	10.30%	10.00%	14.80%

		16667	16670	16631	16635	16637	16665	16662	16648	16673
Description	Description	Claysburg	Claysburg	Curryville	Duncanville	East Freedom	Newry	Martinsburg	Hollidaysburg	Roaring Spring
Population		1,392	47	52	12,345	2,408	285	6,118	15,259	5,141
Gender:	Male	50.10%	51.10%	50%	48.60%	50.90%	41.10%	47.20%	46.40%	48.00%
	Female	49.90%	48.90%	50%	51.40%	49.10%	58.90%	52.80%	53.60%	52.00%
Age:	Median	41.4	48.5	68.2	45.7	46.1	40.8	48.3	47.1	43.3
	18 years and under	23.50%	19.10%	0%	19.80%	16.70%	24.90%	19.40%	19.50%	21.50%
	65 years and over	15.90%	27.70%	61.50%	20.20%	25.90%	13%	26.20%	20%	20.10%
Race/Ethnicity	White	99.10%	100%	100%	97.30%	98.90%	89.50%	98.60%	96.70%	96.80%
	All Others	0.90%	0%	0%	2.70%	1.10%	10.50%	1.40%	3.30%	3.20%
Education	Less than High School	14.90%	0%	30.80%	9.60%	11.30%	18.30%	12.70%	7.80%	8.10%
	High School	51.40%	58.60%	59.60%	51.50%	59.70%	49.50%	48.50%	35.40%	53.90%
	Above High School	33.80%	41.30%	9.60%	39.10%	29%	32.30%	38.80%	57%	38%
Personal Income	Mean Household Income	$51,968	$63,306	$33,190	$63,680	$50,209	$43,397	$56,110	$80,748	$57,226
	Per Capita Income	$21,154	$39,290	$19,787	$26,619	$21,880	$17,565	$24,253	$34,009	$23,953
Unemployment	Unemployment Rate	6.30%	0%	0%	2.70%	6.70%	2.30%	3.50%	1.90%	4.50%
Health Insurance	Public Health Insurance	31.40%	20.70%	30.80%	32.50%	49.50%	35.80%	32.80%	28.30%	37.30%
	No Health Insurance	12.60%	0%	30.80%	7.80%	8.60%	9.80%	12.70%	4.50%	8.00%
Poverty Status	Family	10.70%	0%	40.00%	6.40%	10.20%	15.60%	6.50%	5.00%	6.40%
	Individuals	16.10%	0%	30.80%	7.70%	11.50%	22.80%	7.60%	8.40%	10.20%

		16682	16686	16693	TRHN	PA
Description	Description	Sproul	Birmingham	Ganister		
Population		171	13,075	4,470	139,304	12758729
Gender:	Male	57.90%	48.30%	50.50%	48.85%	48.80%
	Female	42.10%	51.70%	49.50%	51.16%	51.20%
Age:	Median	45.7	43.3	40.1	42.39	40.40%
	18 years and under	18.10%	20.70%	24.60%	21.12%	21.50%
	65 years and over	0%	17.10%	15.70%	18.19%	16%
Race/Ethnicity	White	100%	98.70%	97.90%	96.36%	81.90%
	All Others	0%	1.30%	2.10%	3.64%	18.10%
Education	Less than High School	0%	6.80%	13.00%	11.05%	11%
	High School	91.10%	51.60%	55.30%	48.41%	36.80%
	Above High School	8.90%	41.60%	31.70%	40.65%	52.20%
Personal Income	Mean Household Income	$44,532	$59,383	$53,834	$57,130	$72,210
	Per Capita Income	$15,343	$24,144	$20,536	$25,528	$28,912
Unemployment	Unemployment Rate	13.80%	4.20%	3.80%	4.07%	5.40%
Health Insurance	Public Health Insurance	23.40%	35.50%	36.40%	37.28%	31.90%
	No Health Insurance	7.60%	8.00%	15.50%	9.52%	9.50%
Poverty Status	Family	0%	7.50%	10.40%	9.39%	9.30%
	Individuals	8.60%	11.70%	14.70%	14.14%	13.50%

Source: U. S. Census Bureau (2014 American Community Survey).

Exhibit A-3 TRHN Business and Industry Employment Profile

Description:	Altoona	Altoona	Altoona	Bellwood	Claysburg	Claysburg	Claysburg	Claysburg
zip code	16601	16602	16641	16617	16625	16650	16655	16659
Civilian employed population 16 years and over	14,353	12,938	1,170	1,248	1,579	983	774	127
Agriculture, forestry, fishing and hunting, and mining	0.40%	0.50%	1.50%	0.20%	0.80%	3.80%	3.60%	3.90%
Construction	5.10%	5.20%	6.20%	5.00%	8.30%	11.10%	8.50%	3.10%
Manufacturing	9.30%	10.20%	8.90%	16.50%	21.50%	12.10%	20.70%	20.50%
Wholesale trade	3.90%	3.90%	5.30%	2.00%	1.80%	3.70%	4.50%	0.00%
Retail trade	14.70%	15.90%	13.80%	18.00%	12.70%	13.10%	11.00%	22.80%
Transportation and warehousing, and utilities	6.40%	5.30%	9.10%	9.10%	3.90%	13.30%	7.90%	6.30%
Information	2.00%	2.20%	1.00%	1.40%	1.20%	0.40%	0.40%	2.40%
Finance and insurance, and real estate and rental and leasing	3.60%	2.90%	3.20%	2.60%	3.70%	2.40%	3.10%	7.10%
Professional, scientific, and management, and administrative and waste management services	7.50%	6.20%	6.30%	4.10%	9.10%	5.20%	5.90%	6.30%
Educational services, and health care and social assistance	26.80%	26.50%	26.80%	24.50%	27.40%	17.70%	19.50%	14.20%
Arts, entertainment, and recreation, and accommodation and food services	10.70%	12.40%	5.10%	6.50%	5.70%	8.30%	7.80%	7.90%
Other services, except public administration	4.60%	4.80%	4.20%	1.80%	3.70%	5.10%	4.70%	3.90%
Public administration	4.90%	3.90%	8.50%	8.30%	0.10%	3.80%	2.50%	1.60%

Description:	Claysburg	Claysburg	Claysburg	Curryville	Duncanville	East Freedom	Newry	Martinsburg
zip code	16664	16667	16670	16631	16635	16637	16648	16662
Civilian employed population 16 years and over	918	630	17	20	6,227	1,067	7,642	2,709
Agriculture, forestry, fishing and hunting, and mining	11.90%	5.10%	0.00%	35.00%	0.90%	3.70%	0.70%	10.30%
Construction	13.30%	8.70%	11.80%	0.00%	5.30%	13.30%	3.00%	7.20%
Manufacturing	12.60%	20.00%	17.60%	40.00%	11.60%	12.10%	8.10%	15.40%
Wholesale trade	2.80%	1.90%	0.00%	0.00%	4.00%	0.00%	1.60%	0.90%
Retail trade	12.00%	12.70%	17.60%	25.00%	16.50%	11.10%	12.80%	14.30%
Transportation and warehousing, and utilities	6.00%	12.50%	17.60%	0.00%	4.80%	13.90%	6.30%	8.50%
Information	0.50%	1.70%	0.00%	0.00%	0.90%	1.80%	2.50%	0.30%
Finance and insurance, and real estate and rental and leasing	1.30%	5.90%	17.60%	0.00%	5.70%	1.80%	4.30%	3.90%
Professional, scientific, and management, and administrative and waste management services	5.20%	3.00%	0.00%	0.00%	7.40%	1.50%	8.00%	4.10%
Educational services, and health care and social assistance	21.20%	12.90%	17.60%	0.00%	24.10%	23.10%	30.10%	20.30%
Arts, entertainment, and recreation, and accommodation and food services	3.30%	7.00%	0.00%	0.00%	10.30%	7.70%	11.50%	7.10%
Other services, except public administration	8.20%	5.10%	0.00%	0.00%	5.20%	3.90%	6.10%	5.10%
Public administration	1.60%	3.50%	0.00%	0.00%	3.40%	6.20%	5.10%	2.70%

Description:	Hollidaysburg	Roaring Spring	Sproul	Birmingham	Ganister		
zip code	16665	16673	16682	16686	16693	TRHN	PA
Civilian employed population 16 years and over	133	2,413	95	6,252	1,983	63,278	5,946,480
Agriculture, forestry, fishing and hunting, and mining	0.00%	3.10%	0.00%	2.90%	9.40%	1.97%	1.40%
Construction	11.30%	6.10%	0.00%	5.70%	8.70%	5.73%	5.70%
Manufacturing	6.00%	20.30%	10.50%	16.50%	18.50%	12.11%	12.20%
Wholesale trade	3.80%	2.70%	0.00%	0.70%	2.50%	2.93%	2.80%
Retail trade	9.00%	14.50%	55.80%	13.60%	10.90%	14.52%	11.80%
Transportation and warehousing, and utilities	0.00%	8.60%	0.00%	5.90%	7.00%	6.47%	5.10%
Information	1.50%	0.90%	0.00%	1.40%	1.40%	1.68%	1.70%
Finance and insurance, and real estate and rental and leasing	0.00%	2.90%	0.00%	3.40%	1.80%	3.57%	6.40%
Professional, scientific, and management, and administrative and waste management services	6.00%	4.80%	0.00%	8.60%	4.30%	6.73%	9.80%
Educational services, and health care and social assistance	39.10%	23.30%	33.70%	25.00%	22.70%	25.62%	26.00%
Arts, entertainment, and recreation, and accommodation and food services	15.80%	5.00%	0.00%	5.20%	4.10%	9.37%	8.30%
Other services, except public administration	2.30%	4.80%	0.00%	5.40%	6.30%	4.99%	4.70%
Public administration	5.30%	3.10%	0.00%	5.70%	2.40%	4.33%	4.10%

Percentages represent civilian employed population 16 years and older residing within primary service area.
Source: U. S. Census Bureau (2014 American Community Survey).

Appendix B

Community Health Status, Needs and Resources

Exhibit B-1 Health Behavior Data

Description	Blair County (2015)	Pennsylvania (2015)	Blair County (2014)	Pennsylvania (2014)	Blair County (2013)	Pennsylvania (2013)	Blair County (2012)	Pennsylvania (2012)	Blair County (2011)	Pennsylvania (2011)
Adult Smoking	23%	20%	23%	20%	23%	21%	22%	21%	23%	22%
Adult Obesity	33%	29%	33%	29%	32%	29%	32%	29%	34%	28%
Physical Inactivity	31%	24%	31%	26%	31%	26%	31%	26%	N/A	N/A
Excessive Drinking	15%	17%	15%	17%	13%	17%	14%	18%	12%	18%
STD's (per 100,000)	245	431	275	415	211	374	165	346	117	340
Teen Births (per 1,000)	33	28	33	29	33	29	36	31	36	31

Source: Robert Wood Johnson County Health Rankings and Roadmaps.

Exhibit B-2 Morbidity Data

Description	Blair County (2015)	Pennsylvania (2015)	Blair County (2014)	Pennsylvania (2014)	Blair County (2013)	Pennsylvania (2013)	Blair County (2012)	Pennsylvania (2012)	Blair County (2011)	Pennsylvania (2011)
Poor Physical Health Days (ave. per 30 days)	4.2	3.5	4.2	3.5	4.9	3.5	5	3.5	5.1	3.5
Poor Mental Health Days (ave. per 30 days)	3.7	3.6	3.7	3.6	4.2	3.6	4	3.6	3.9	3.6
Diabetes	11%	10%	11%	10%	11%	10%	11%	10%	10%	9%
HIV Prevalence (per 100,000)	68	292	68	292	71	293	71	294	70	N/A
Drug Poisoning Deaths (per 100,000)	15	15	14	14	N/A	N/A	N/A	N/A	N/A	N/A

Source: Robert Wood Johnson County Health Rankings and Roadmaps.

Exhibit B-3 Mortality Data

Description	Blair County (2010-12)	Pennsylvania (2010-12)	Blair County (2009-11)	Pennsylvania (2009-11)	Blair County (2008-10)	Pennsylvania (2008-10)	Blair County (2007-09)	Pennsylvania (2007-09)	Blair County (2006-08)	Pennsylvania (2006-08)
Heart	*202.1	181.5	214.1	186.6	244.4	194	259.7	203.2	279.2	215.4
Cancer	173.6	176.7	185.4	180	201.4	183.8	201.6	187.6	201	191.6
Stroke	40.9	38.3	45.6	39.3	43.5	40.1	47.2	42.6	50.4	45.3
CLRD	40.4	38.6	39.2	38.9	42.3	39.9	41.1	40.6	43	40
Accidents	45.6	42.3	46.4	40.8	48.7	40.4	50.9	40.8	52.6	40.9
Alzheimer's	24	19.2	23.2	19.3	23.5	20.6	22.1	21.4	23.6	22.5
Diabetes	22.2	20.8	23	20.2	21.4	20.4	23.9	21.4	25.8	22.4
Nephritis	17.5	16.9	19.2	17.7	19	18.6	18.9	19	20.4	19.9
Influenza	16.1	14.1	17.7	14.7	17.1	15	18.9	16	16.4	17.1
Septicemia	13.1	13.1	14	13.7	13.6	14.2	14.9	15.2	15.9	16.2
Age-Adjusted Death Rate per 1,000	8.3	7.5	8.3	7.7	8.4	7.6	9	7.7	9.1	8.1
	*per 100,000									

Source: Pennsylvania Department of Health County Health Profiles.

Exhibit B-4 Health Access Risk

The table depicts population health access risk by ZIP code within TRHN primary service areas. The values represent the distance in standard deviation from the Rural Pennsylvania Mean Health Access Risk value. The table depicts community with health access risk values (those with positive values) per ZIP code for the most part well above the state mean for rural communities. The "health access risk values" for two communities served by TRHN are greater than the average value for all Pennsylvania rural communities (See Exhibit B-4). These include Altoona (ZIP codes 16601 and 16602) and Clayburg (ZIP code 16625). The total population within these ZIP codes represents approximately 45% of TRNH service area population.

ZIP Code	Description	County	Population	Health Access Risk z-of-z score
16601	Altoona	Blair County	33870	.22
16602	Altoona	Blair County	29554	.30
16641	Altoona	Blair County	2598	-.27
16617	Bellwood	Blair County	2806	-.62
16625	Claysburg	Blair County	3868	.72
16650	Claysburg	Blair County	2036	0
16655	Claysburg	Blair County	1601	-.51
16659	Claysburg	Blair County	303	-.70
16664	Claysburg	Blair County	2104	.07
16667	Claysburg	Blair County	1392	.13
16670	Claysburg	Blair County	47	-2.34
16631	Curryville	Blair County	90	.94
16635	Duncansville	Blair County	11321	-.70
16637	East Freedom	Blair County	2873	.10
16648	Hollidaysburg	Blair County	15538	-.91
16662	Martinsburg	Blair County	6040	-.28
16665	Newry	Blair County	299	.68
16673	Roaring Spring	Blair County	5519	-.41
16682	Sproul	Blair County	117	-.97
16686	Birmingham	Blair County	13488	-.51
16693	Ganister	Blair County	4185	.17

Exhibit B-5: Community Health Resources

Description:	Pennsylvania (State Total)	Blair County
HOSPITALS & NURSING HOMES(11)		
General Acute Care Hospitals, 2013-14	157	3
Hospital Beds Set Up & Staffed, 2013-14	32,525	408
Beds Set Up & Staffed Per 1,000 Residents	2.54	3.24
# Nursing Homes, 2014	701	10
# Total Licensed/Approved Nursing Home Beds, 2014	88,063	1,474
Total Licensed/Approved Nursing Home Beds Per 1,000 Residents, 2014	6.89	11.70
OFFICES OF PHYSICIANS AND DENTISTS(12)		
# Physicians Offices (NACIS 6211), 2013	8,887	111
# Physicians Offices Per 100,000 Residents, 2013	69.5	87.8
# Dentists Offices (NACIS 6212), 2013	5,169	51
# Dentists Offices Per 100,000 Residents, 2013	40.4	40.4

Sources: Pennsylvania Department of Health (Hospital and Nursing Home data)
U. S. Census Bureau County Business Patterns (Physician and Dentist data)

Exhibit B-6 Tyrone Hospital Operational Data

Description	2010-11	2011-12	2012-13	2013-14	2014-15
Long Tern Care Unit	No	No	No	No	No
Licensed Beds	25	25	25	25	25
Beds Set Up and Staffed	25	25	25	25	25
Admissions	852	679	591	652	734
Discharges	857	681	585	652	720
Patient Days of Care	3355	2523	2236	1882	1766
Discharge Days	3444	2560	2062	1915	1745
Bed Days Available	9125	9233	9248	9195	9195
Average Length of Stay	4.02	3.76	3.52	2.94	2.42
Occupany Rate	36.8	27.3	24.2	20.5	19.2
Live Births	0	0	0	0	0
Inpatient Surgical Operations	312	132	165	165	387
Outpatient Surgical Operations	1251	1280	1224	1226	1762
Total Surgicla Operations	1563	1412	1391	1391	2149
Medical Staff (Board Certified)	31	38	86	37	38
Medical Staff (Other)	7	7	12	7	6
Total Medical Staff	38	45	98	44	44

Source: Pennsylvania Department of Health Hospital Statistical Report.

Exhibit B-7 Tyrone Hospital Quality Data

	Patients Highly Satisfied		Recommended Care		Readmission Composite	
	TH	PA	TH	PA	TH	PA
2014	79.67%	69.33%	99.15%	97.79%	NA	NA
2013	79.33%	68.50%	99.35%	98.55%	19.90%	19.49%
2012	NA	66.87%	99.12%	98.23%	20.64%	20.43%
2011	NA	65.34%	98.35%	97.67%	22.51%	21.84%
2010	NA	64.75%	NA	96.25%	NA	NA
2009	NA	63.34%	NA	95.00%	NA	NA
2008	NA	NA	NA	94.00%	NA	NA

Overall Recommended Care (This measure is a weighted average of all the process-of-care, or "core" measures, reported on CMS Hospital Compare)
Percent of Patients Highly Satisfied (This measure is used to assess adult inpatients' perception of their hospital. Patients rate their hospital on a scale from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible. Highly satisfied 7.0-10.0)
Readmission Composite (Average Medicare hospital 30-day readmission rates for heart failure, heart attack, stroke, VTE, and pneumonia)
Source: WNTB.org (Why Not the Best)

Exhibit B-8 Tyrone Hospital Financial Data

Tyrone Hospital	2010	2011	2012	2013	2014	2015
Operating Revenue (000's)	$18,209	$19,193	$21,978	$21,335	$24,733	$27,947
Operating Income	($211)	($847)	$346	$568	$403	($1,383)
Net income	$273	($554)	$503	$767	$743	($950)
Operating Return	-1.16%	-4.41%	1.57%	2.66%	1.63%	-4.95%
Net Return	1.50%	-2.89%	2.29%	3.60%	3.00%	-3.40%

Source: Pennsylvania Health Care Cost Containment Council

RESEARCH CONCLUSIONS AND POLICY CONSIDERATIONS

Public sector healthcare policy ultimately supports strategic initiatives aimed at improving the health of all members of society in an equitable way as measured by increases in the quality and years of human life. The ability to achieve this comprehensive goal is influenced by a grouping of interrelated determinants. These include access to affordable and quality healthcare services, behavior on the part of individuals, social and economic conditions, the physical environment, and heredity.

The Current State of Rural Health

When evaluated on length of life and quality of life measures, the population health status of rural counties in Pennsylvania largely remains below state and national averages. In an overall ranking of Pennsylvania's 67 counties, all but four of the counties ranked between 51 and 67 in health outcomes are classified as rural counties. Not surprisingly all but two of the counties are classified as rural counties that rank between 51 and 67 in health determinants. These determinants include health behaviors, availability of healthcare services, social and economic factors, and the physical environment. Stark differences between these rural counties and other Pennsylvania counties are most apparent when comparing measures associated with the availability of affordable and quality healthcare.[103] These differences are supported by the following facts: the number of rural community hospitals over the last 30 years has declined: rural regions contain more than twice as many Health Professional Shortage Areas than urban areas; and, the number of independent rural pharmacies continues to decline.

Research Findings

Opportunities to reverse the discouraging trends summarized above exist. The networking of rural healthcare providers and/or rural healthcare institutions within their communities or to larger regional systems offers the promise of increasing human and capital resources to underserved communities for ongoing support of point of service care. The five case studies present multiple and varied strategies for

[103] County Health Rankings and Roadmaps (Robert Wood Johnson Foundation). http://www.countyhealthrankings.org/#app/.

initiating and maintaining both equity and nonequity alliances to sustain health-related services within the service areas of each of the rural health systems reviewed. Findings consistent across all five case studies are as follows:

- The formation of healthcare alliances resulted in increased rural community healthcare capacity.
- The increase in community healthcare capacity could not be definitively linked to the improvement of population health status within the communities studied.
- Many of the increases in rural community healthcare capacity (for example, existing service expansion or new service introduction) that resulted from the formation of healthcare alliances were based on documented community need.
- Methods of system organization and service delivery aligned with recommended rural healthcare practices.
- The healthcare alliances led to improved measures of structural and process quality, service efficiency, and increased accessibility to healthcare services for residents of rural communities.

Key Stakeholders

The lessons learned from this research may benefit healthcare providers and institutions pursuing collaborative strategies, professional associations providing support to their member institutions, and those in state government motivated to improving the quality of life of rural community residents. Those organizations within the nonprofit sector that may benefit from this work include: the Pennsylvania Hospital and Health Systems Association; the Pennsylvania Medical Society; the Pennsylvania Association of Community Health Centers; the Pennsylvania Academy of Family Physicians; and the Pennsylvania Office of Rural Health. Within state government, the Pennsylvania Department of Health, the Pennsylvania Governor's Advisory Council on Rural Affairs, the Senate committees (Agricultural and Rural Affairs and Public Health and Welfare), and the House of Representatives committee (Agricultural and Rural Affairs and Public Health and Welfare) may find the results of the research of benefit.

Policy Considerations

The researchers offer three possible ways the research findings may inform current policy. Among nonprofits, benefit may accrue directly to the Pennsylvania Office of Rural Health.[104] The Pennsylvania Office of Rural Health (PORH) is charged with being a source of coordination, technical assistance, partnership and network development, and of support for the recruitment and retention of healthcare providers. Research findings address each of these responsibilities and thus may serve to inform PORH's strategic policy recommendations across each. Of note, PORH is responsible for several rural hospital and health system initiatives. One of the initiatives, the Medicare Rural Hospital Flexibility Program, specifically focuses on facilitating improvement of the quality, operational, financial and population management capabilities and competencies of Critical Access Hospitals (CAH). Research findings on community collaboration, service expansion, quality improvement, and improved operational efficiency gleaned from four CAH institutions - Tyrone Hospital, Soldiers & Sailors Memorial Hospital, Penn Highlands Brookville, and Penn Highlands Elk - reviewed in the study have direct application.

From the state's perspective, benefit may be realized by the Department of Health through the efforts of its Bureau of Health Planning, especially through the Bureau's Health Improvement Partnership Program initiative (HIPP).[105] More specifically, the research conclusively documents the benefits of community collaboration to achieve goals championed by HIPP. The research provides the bureau with three strong business cases to serve as models of community collaboration. These include the Laurel Health System, the Tyrone Regional Health Network, and the Wayne Memorial Health System cases. The research also

[104] The Pennsylvania Office of Rural Health (PORH) was formed in 1991 as a partnership between the federal government, the Commonwealth of Pennsylvania, and The Pennsylvania State University. The office is one of 50 state offices of rural health in the nation funded through the Federal Office of Rural Health Policy in the U.S. Department of Health and Human Services and the *Pennsylvania Department of Health*. The mission of the Pennsylvania Office of Rural Health is to improve the health of rural communities and their residents throughout the Commonwealth by: 1). Compiling, analyzing, and disseminating information to policy makers, health providers, health educators, and health administrators; 2). Strengthening the existing network of rural providers, planners, and advocates by encouraging partnerships and identifying opportunities for collaboration and cooperation; 3). Increasing interest in rural health needs, opportunities, and policy issues; and 4). Acting as a liaison between academia, state government, professional associations, and the general public.

[105] A Health Improvement Partnership is a local collaborative organized to improve the health of the respective community. Each Health Improvement Partnership is unique in size, membership, operating structure, and area of focus. Community healthcare grants are available to expand and improve healthcare access and service, reduce unnecessary use of hospital emergency room services, and encourage collaborative relationships among community-based healthcare clinics, hospitals, and other healthcare providers.

points to the fact that change management requires the direction of a recognized community institutional leader with the requisite skills to create and sustain a community collaborative. In each of these cases that leader was the local community hospital. At the present time, potential institutions eligible for the community based healthcare grant program (CBHCP) offered by HIPP are identified as Federally Qualified Health Centers (FQHC) or FQHC-Look Alikes; Certified Rural Health Centers (RHC); Hospital Health Clinics; Free or Partial Pay Health Clinics; and Nurse Managed Healthcare Clinics. Efforts by the Bureau to increase awards available to community health organizations and to expand the types of organizations eligible for the grants to include Critical Access Hospitals and Rural Community Hospitals would expedite efforts to reach HIPP goals.

In addition, state policy initiatives to support critical access hospitals by reducing their financial vulnerability are supported by the research findings. In four of the five case studies, the immediate and pressing reason for seeking an alliance centered on concerns about both near-term and long-term financial viability.[106] Rural hospitals are financially vulnerable for a number of reasons, including, but not limited to, decreasing inpatient service volumes and higher than average reliance on revenue from public entitlement and means tested programs. In three of the cases, Critical Access Hospitals sought alliances because of either an immediate concern with continuing operations (Tyrone Hospital and Brookville Hospital) or concerns about sufficient financial resource to effectively respond to direct competition (Soldiers & Sailors Memorial Hospital). The purpose of the CAH program ironically is to reduce the financial vulnerability of rural hospitals and improve access to healthcare by keeping essential services in rural communities.[107] In these three instances, the CAH program was not entirely successful. Although the alliances formed by the three hospitals improved their respective financial positions, each of the hospitals was not ideally placed in a position of strength when entering alliance discussions. The most dramatic of

[106] The four cases include Shamokin Community General Hospital, Laurel Health System, Tyrone Regional Health Network, and Penn Highlands Health.

[107] Critical Access Hospital" is a designation given to certain rural hospitals by the Centers for Medicare and Medicaid Services (CMS). This designation was created by Congress in the 1997 Balanced Budget Act in response to a string of hospital closures in the 1980s and early 1990s. The CAH designation is designed to reduce the financial vulnerability of rural hospitals and improve access to healthcare by keeping essential services in rural communities. This is accomplished through cost-based Medicare reimbursement.

the three cases was Brookville Hospital, which essentially contacted Dubois Regional Medical Center (DRMC) and requested DRMC immediately assume direct responsibility for the financially failing hospital. The limited effectiveness of the CAH program in Pennsylvania is partially attributable to limited state financial support of healthcare institutions established to support our most vulnerable populations. More specifically, the CAH program ensures that CAH hospitals receive "cost based reimbursement" for services provided Medicare enrolled patients.[108] The CAH program, however, does not mandate services provided to patients enrolled in the Medical Assistance program be reimbursed at cost. Each state independently selects a Medical Assistance reimbursement policy for CAH institutions. At the present time, 23 states reimburse CAH providers at cost for services provided patients enrolled in Medical Assistance programs.[109] Pennsylvania's current Medical Assistance fee schedule reimburses providers, including CAH providers, below the cost of their services. Aware of this circumstance, Pennsylvania annually approves a supplemental appropriation to CAH institutions, the CAH DSH Program, to address the financial challenges faced by hospitals serving a disproportionately high percentage of patients enrolled in the Medical Assistance program.[110] Even with the supplemental payment, there is evidence, according to the Hospital and Health Systems Association of Pennsylvania, that Medical Assistance reimbursement does not match or exceed the costs to provide hospital services.[111] In addition, the supplemental appropriation approval process can be inadvertently used for political purposes as experienced during the 2015-16 fiscal year budget appropriation.[112] Therefore, in line with a similar policy recommendation by the Hospital and Health System of Pennsylvania, the researchers recommended that Pennsylvania follow the lead of the 23 other states and adopt a law (changing the Pennsylvania Welfare

[108] Cost-based reimbursement results in a payment to the provider based upon the cost of the resources consumed to provide care. Until the advent of prospective payment systems in the United States in the early 1980s, hospitals were paid by Medicare and other payers on the basis of reasonable costs. Cost-based reimbursement is a form of retrospective reimbursement – the amount to be paid to the provider is determined after the service is rendered.

[109] States' Use of Cost-Based Reimbursement for Medicaid Services at Critical Access Hospitals (CAHs). https://www.ruralcenter.org/tasc/resources/states%E2%80%99-use-cost-based-reimbursement-medicaid-services-critical-access-hospitals-cahs.

[110] Supplemental Medicaid payments made through the Disproportionate Share Hospital Program are intended to provide critical reimbursement to those Pennsylvania hospitals that serve a disproportionate share of the state's most vulnerable and medically needy citizens. Across the state, hospitals including CAH hospitals receive supplemental payments because the base payments they receive do not fully cover the costs of treating Medical Assistance (MA) patients, and to ensure that these essential services are available.

[111] Critical Access Hospitals: Key to Rural Health Care https://www.google.com/#q=HAP+and+Critical+Access+Hospitals.

[112] Pennsylvania hospitals worried about Gov. Wolf's budget plan http://www.post-gazette.com/business/healthcare-business/2015/04/19/Pennsylvania-hospitals-worried-about-Gov-Tom-Wolfs-budget-plan/stories/201504190076.

Code) to pay Medical Assistance rates based on reasonable costs to rural CAHs in a manner similar to the Medicare CAH program.[113] This policy change would reduce the financial vulnerability of Critical Access Hospitals by increasing the amount and predictability of cash flows to these vital service providers. As importantly, by improving the financial position of these institutions, the role of these rural hospitals as lead institutions of collaboratives within their communities and as valued partners in regional networks of care may be enhanced.

Finally, there is also potential benefit for the Pennsylvania Office of Attorney General as it works to offset possible negative outcomes of equity-based healthcare alliances in its enforcement of the state's Unfair Trade Practices and Consumer Protection legislation.

[113] Critical Access Hospitals: Key to Rural Health Care. https://www.google.com/#q=HAP+and+Critical+Access+Hospitals.

Research Documents:

Research Document A: Pennsylvania Alliances Framework

Pennsylvania Alliances Framework
(Definitions of column headers at the end of document)

	Health System	Focal Rural Organizations	Relationship Event	Relationship Type	Relationship Length	Relationship Operational	Relationship Financial	State Hospital Region	Health Access Risk	Contact
	Two Hospital System									
1	Summit Health System	Chambersburg &Waynesboro Hospitals	Waynesboro joins parent of Chambersburg-Summit Health in 1995	Horizontal M/A	twenty (20) years	"patient first" philosophy; strong commit to community; lean system	above three year average total margin for region	5	middle	no
2	Blue Mountain Health System	Gnadden Huetten and Palmerton Hospitals	Both mutually agree to integrate in 2004	Horizontal M/A	eleven (11) years	No evidence of added value created through integration	significantly below three year average total margin	7	very low	no
3	Washington Health System	Washington Health and SW Regional Medical Center	Acquisition by WHS of SW Regional MC as of July, 2015	Horizontal M/A	less than one (1) year	clear effort to sustain SW Regional through cuts and economies	WHS above SWR below three year average total margin	1	high	no
4	Upper Allegheny Health System	Olean General and Bradford Regional Medical Center	Both mutually agree to integrate in 2009	Horizontal M/A	six (6) years	No evidence of added value created through integration	At the three year average total margin	2	middle	no
	Multi-Hospital System									
1	Penn Highlands Health System	Elk, Dubois, Brookville, and Clearfield Hospitals	All mutually agree to integrate in 2011	Horizontal M/A	four (4) years	strategic plan to reduce costs and realign service offerings	all four below three year average total margin	2	very low	**yes**
2	Community Health	Berwick Hospital Center	BHC acquired by for-profit	Horizontal M/A	Sixteen (16) years	part of loose affiliation of PA	below three year average	4	very low	no

	System (CHS)	(BHC)	CHS in 1999			hospitals; investment in each hospital	total margin			
	Health System	**Focal Rural Organizations**	**Relationship Event**	**Relationship Type**	**Relationship Length**	**Relationship Operational**	**Relationship Financial**	**State Hospital Region**	**Health Access Risk**	**Contact**
3	Susquehanna Health System (SHS)	Laurel Health System (LHS) Soldiers and Sailors	SHS (Muncy, Providence, Williamsport) acquire LHS in 2012	Vertical M/A	three(3)years	Complete story from dev of local network to regional org to ACO participation	Soldiers and Sailors above three year average total margin	4	middle/ upper middle	**yes**
4	Conemaugh Health System (CHS) Duke/LP Sub	Nason Hospital (NH)	Duke/LP purchase of NH as add to CHS in 2015	Vertical M/A	Less than one (1) year	For-profit national invest In region and community	four at three year average total margin	3	middle/ upper middle	yes
5	Geisinger Health System	Shamokin Area Community Hospital (SACH)	GHS acquires SACH in 2012	Vertical M/A NEV Strategic Partnership	three (3) years eight(8/10)ten years	Strong joint community action based on community assessment	SACH in 2012 below three year average total margin	4	low middle	**yes**
6	UPMC Health System	Bedford Memorial Hospital	UPMC acquires Bedford Memorial in 1997	Vertical M/A	eighteen (18) years	significant tech and service investment, action on com assessment	Above three year average total margin	3	middle/ low middle	**yes**
7	Guthrie Health System (GHS)	Towanda Memorial Hospital TMH	GHS acquires TMH in 2015	Vertical M/A	Less than one (1) year	Broad quality, coord, best practice goals	TMH below Three year ave. tot. marg.	6	upper middle	no
8	Well span Health System (WHS)	Gettysburg Hospital (GH)	York Hospital and GH merge to initially form Well span in 1999	Horizontal M/A	sixteen (16) years	tech and service investment, action on com assessment	GH significant above three year average total margin	5	upper middle	**yes**
9	Lehigh Valley Health Network (LVHN)	Pocono Health System (PHS)	LVHN merges PHS 2015	Vertical M/A	Less than one year (1)	Long history of collaboration prior to merger	PHC above three year ave total margin	6	middle/ upper middle	no
1	Penn State	Tyrone Regional	TRHN (includes	Vertical	Less than one	Successful local	At the three		middle/	

0	Hershey Health System (PSHHS)	Health Network (TRHN)	CA hospital) intended affiliation with PSHHS 2015	M/A? Prior NEH strategic network	(1) year	network development to disciplined search for region partner	year average total margin	3	upper middle	**yes**
	Health System	**Focal Rural Organizations**	**Relationship Event**	**Relationship Type**	**Relationship Length**	**Relationship Operational**	**Relationship Financial**	**State Hospital Region**	**Health Access Risk**	**Contact**
	Hospital Alliances									
1	UPMC (Hamot and Kane), Warren General, Charles Cole	UPMC Kane,Warren General, and Charles Cole	Ongoing affiliation of these community hospitals to UPMC Hamot	NEH strategic network	Multiple years	UPMC Hamot providing specialized care services at community hospitals	With the exception of Kane, all at or above three year average	2	upper middle	no
2	Meadville Medical Center and Titusville Area Hospital	Meadville Medical Center(MMC) and Titusville (TAH)	Collaborative agreement MMC and TAH in 2015	NEH strategic partnership	less than one (1) year	Seeking ways to collaborate to improve qual. red. costs	both hospitals are above three year average total margin	2	Low middle	no
3	JC Blair, Fulton County And Pinnacle Health System (PHC)	JC Blair and Fulton	Affiliation JCB and PHS in 2014 and shared mgmt. JCB and Fulton in 2015	NEV strategic partnership	Two (2) years and less	Clinical and management support; recruit; purchasing	both hospitals are below three year average total margin	5	Low middle and high middle	yes
4	Pennsylvania Mountain Care Network	Indiana Regional, Punxsey, and Clarion Hosp.	Intent to form parent corp. but w/o asset merger	NEH strategic network	one (1) year	Seeking ways to collaborate to improve qual. red. costs	Indiana above Punxsey and Clarion below three year ave	2/3	high	yes
5	Pa. Mountains Healthcare Alliance	Multiple rural hospitals	Mutual agreement to form purchase association	NEH strategic network	multiple years	Generated savings for participant liability insur.	savings benefits	multiple	multiple	no
6	Keystone ACO	Wayne Memorial (WM)	WM member of Keystone ACO in 2013	EV strategic network	two (2) years	Community network in MC ACO	WM at three year average total margin	6	middle	yes

7	Penn State Hershey and Mt. Nittany, Moses Taylor, Susquehanna HealthSystem	Mt. Nittany, Moses Taylor, Susquehanna HealthSystem	Ongoing affiliation of community hospitals to Penn State Hershey	NEH strategic network	multiple years	PS Hershey providing specialized care services at community hospitals	varied results	4,5,6	multiple	no
	Health System	**Focal Rural Organizations**	**Relationship Event**	**Relationship Type**	**Relationship Length**	**Relationship Operational**	**Relationship Financial**	**State Hospital Region**	**Health Access Risk**	**Contact**
	Community Alliances									
1	Primary Health Network	Primary Health Network	Expansion eastward of health centers	NEH strategic networks	ongoing	Community health center leading development of integrated community health networks				no

1. Health System – The organization acquiring focal organization and/or group of collaborating organizations.
2. Focal Rural Organization – The organization that will serve as the key organization of the case study. The case study will be from its perspective.
3. Relationship Event - The triggering event/s that will serve as the focus of the case study.
4. Relationship Type - A typology that includes a range of non-equity and equity organizational arrangements – from non-equity collaborations to mergers and acquisitions.
5. Relationship Length - Length of new organizational arrangement/s.
6. Relationship Operational - Benefits and/or planned benefits resulting from change in organizational status.
7. Relationship Financial - A simple measure of the organization/s three year average total margin (income/total revenue) relative to the average total margin for the organization assigned hospital region. Data obtained from PHC4.
8. State Hospital Region - Aligns with nine (9) hospital regions identified in PHC4 Financial Performance Report.
9. Health Access Risk - Self developed measure of health access risk. Descriptors developed by CRP based on distribution of actual measure values.
10. Contact - Support from either Office of Rural Health or PACHC to provide letter of introduction to organization representatives.

Research Document B: Semi-Structured Interview Scheme

Case Studies of Rural healthcare Alliances, Mergers and Acquisitions
Chad Kimmel and Dave Sarcone
July, 2015

Interview Guide

Summary:

This interview guide is developed for the completion of a standardized open-ended interview. It is designed to be administered to key stakeholders of rural healthcare alliances, mergers and acquisitions. By completing interviews with key stakeholders we expect to better understand the following: reasons leading to an alliance, merger or acquisition; the challenges associated with the planning, implementation, and maintenance of an alliance, merger or acquisition; actual versus expected outcomes to the organization and actual versus expected community impact resulting from the alliance, merger or acquisition.

The interview questions are designed to address each of the objectives listed above.
The purpose and type of each question is included with each question. Depending on the roles of the interviewee with the organization being reviewed, part or all of the interview questions will be completed.

Today we would like to learn more about your organization's effort to more closely align with other healthcare organizations. We plan to start by asking general questions about the relationship followed by more specific questions.

Introductory Questions (Pre-Alliance, Merger or Acquisition)

Q1. To begin would you please provide us with a brief summary of your professional background and your current role with the organization or professional relationship with the organization?

Q2a.To the best of your knowledge would you please provide us with a brief history of the organization prior to the alliance, merger or acquisition? (*moving forward referred to as ama)*

Q2b. Prior to the *ama*, how would you best describe the mission of your organization?

Q2c. With regard to the mission, could you more specifically describe the following about the organization: the types of services provided; patients served; service area boundary and functions performed (promotion and prevention, primary, secondary tertiary, quaternary?)

Q3. Prior to the *ama*, please describe how the organization collaborated with other independent community healthcare providers and organizations to achieve the organization's mission?

Q4. Prior to the *ama*, how successful do you believe the organization was in achieving its mission?

Q5. In what ways did the organization measure its performance and related success?

Q6. Prior to the *ama*, what external challenges faced the organization in its efforts to meet its mission?

Q7. With regard to external challenges, could you more specifically describe the influence of the following external forces on organizational performance: workforce shortages, physician practice dynamics; changing capital markets; insurance industry consolidation; reform; relative fragility of organization relative to others and concerns with competition; and/or expenses outpacing reimbursement?

Q8. What internal factors (weaknesses) posed challenges when the organization attempted to respond to external challenges?

Q9. With regard to internal concerns, could you more specifically describe the influence of the following on organizational performance: human, physical, financial, knowledge and learning, and/or organizational resource constraints?

Before we begin the next section of the interview in which we will ask you to comment on the organization's experience with the *ama* process, we want to make sure we clearly understand the organization, its performance and your role in and/or with the organization prior to the *ama* (*summarize interview to this point*). Before we move on, are there any other comments you would like to make on these topics?

<u>The Alliance, Merger and/or Acquisition Process</u>

Factors Leading to the Alliance, Merger and/or Acquisition

The next several sets of questions are very important to this research. Please feel free to respond to these questions in ways that make sense to you. We will begin with a question on those factors precipitating the *ama*. This question will be followed by questions on the events leading to the formation of the *ama* and the characteristics of the new organizational relation.
Let's begin.

The strategic decision to enter into an *ama* is typically precipitated by an organizational challenge that either creates an opportunity or threatens the organization's ability to carry out its mission.

Q10. What environmental opportunities or threats caused the organization to consider an *ama*?

Seeking a Partner

Q11a. Did the organization proactively seek a partner?

Q11b. Did an organization approached by a potential partner and asked to consider a collaborative relation?

Q11c. Did the organizations mutually seek a partner?

Q11d. Would you please provide a more detailed description of the initial steps in the *ama* process?

Partner Characteristics

Q12a.With regard to the partnering organization/s, in what ways is it (are they) similar to the organization and in what ways does it (do they) differ?

Q12b.With regard to the partnering organization/s, in what ways are they similar to the organization and in what ways do they differ – specifically with regard to the types of services provided; patients served; service area boundary and functions performed (promotion and prevention, primary, secondary tertiary, quaternary?)

Q13a. In what ways was it expected that the partnering organization's resources and capabilities help address the threats faced by the organization or opportunities available to the organization?

Q13b. Can you provide examples partnering organization's resources and capabilities that were expected help address the threats faced by the organization or opportunities available to the organization?

Partners Proponents and Opponents

Q14a. Within the organization who championed the formation of the *ama*?

Q14b. Within the organization who opposed the formation of the *ama*?

Q15a. Within the community who championed the formation of the *ama*?

Q15b. Within the community who opposed the formation of the *ama*?

Partner Relations

Q16. In what ways did the final *ama* change the organization's management structures and processes?

Q17. In what ways did the final *ama* change the organization's relations with existing community healthcare providers and organizations?

Before we begin the next section of the interview in which we will ask you to comment on the outcomes and impacts of the *ama*, we want to make sure we clearly understand the process that lead to the organization entering into an *ama* and the characteristics of the final partnership arrangement (*summarize interview to this point*). Before we move on, are there any other comments you would like to make on these topics?

The Alliance, Merger and/or Acquisition Outcomes and Impacts

The next several sets of questions are very important to this research. Please feel free to respond to these questions in ways that make sense to you. We will begin with questions on outcomes to the organization resulting from the *ama*. This question will be followed by questions on community impact resulting from the *ama*.
Let's begin.

Organizational Outcomes

Q18a. Do you believe the *ama* influenced the ability of the organization to improve the services to the community it serves and/or provide these services in a more efficient way?

Q18b. If so, can you provide examples of ways organization services to the community were improved and/or helped provide these services in a more efficient way?

Community Impact

Q19a. Do you believe the *ama* positively impacted the health of the community?

Q19b. If so, can you provide examples of ways the community's health was positively impacted?

Q20. Were the community health issues targeted by the *ama* those issues identified as critically important based on an assessment of community health status?

Q21. Were the community health interventions implemented as a result of the *ama* in line with best practices for rural healthcare services?

Before we bring the interview to a close we want to make sure we clearly understand the outcomes and impacts of the *ama* (*summarize interview to this point*). Before we close, are there any other comments you would like to make on these topics?

Thank you for agreeing to be interviewed.

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